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MARSHALL FIELD

A Trustee of the Museum whose benefactions during the past year have made possible the establishment of a pension plan embracing all employees

ANNUAL REPORT OF THE DIRECTOR
TO THE
BOARD OF TRUSTEES

FOR THE YEAR 1939



REPORT SERIES
FIELD MUSEUM OF NATURAL HISTORY
VOLUME 12, NUMBER 1
JANUARY, 1940

PUBLICATION 488

PRINTED IN THE UNITED STATES OF AMERICA
BY FIELD MUSEUM PRESS

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* DECEASED

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* DECEASED

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* DECEASED, 1939

† RESIGNED, 1939

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† RESIGNED, 1939

JAMES SIMPSON

January 26, 1874—November 25, 1939

Elected a Trustee November 19, 1920

On November 25, 1939, in the death of James Simpson, Field Museum lost one of its Trustees, whose services extended from November 19, 1920, to the date of his death, and one who had, both in service and in contributions, been in the front rank.

James Simpson served the Museum for many years, not only as a member of the Finance and Auditing Committees, but also as a Vice-President. He was a Patron and an Honorary Member. The Simpson Theatre, in the Museum building, was constructed as a result of his munificent contribution, and will, as long as the building stands, be a memorial to his generosity and good work, as will also the exhibit of Marco Polo sheep, which group was obtained by an expedition financed by him.

The preceding lines are merely the bald facts concerning James Simpson's service to Field Museum, for in all the years of his trusteeship he regarded his work as a bounden duty or service, and a service that was rendered quietly and without any ostentation, but in the most effective manner.

His advice and counsel were always sought by the members of any committee of which he was a member, and were always given after the matter had been weighed and studied by him. One of his outstanding contributions of service is shown in the Pension Plan adopted only last year by the Museum, and the sound condition of the Museum's funds and investments are in a large measure due to his untiring thought and advice as to those investments.

James Simpson's place cannot be filled, and this Board, with whom he has served these many years, will always miss him. As a tribute to his memory the Board directs that this memorial be entered on the records of this meeting and that the expression of their deep sympathy and their gratitude for their memories be expressed to his family.

CLIFFORD C. GREGG, Secretary
December 18, 1939

STANLEY FIELD, President
JOHN P. WILSON
A. A. SPRAGUE



JAMES SIMPSON

January 26, 1874–November 25, 1939

ANNUAL REPORT OF THE DIRECTOR

1939

To the Trustees of Field Museum of Natural History:

I have the honor to present a report of the operations of the Museum for the year ending December 31, 1939.

The year 1939 stands out as a year of great accomplishment at Field Museum. Particular emphasis was given to matters within the organization. Outstanding was the establishment of a pension plan which will provide in future for the automatic retirement of employees as they come to the established pension ages, 65 years for men and 60 for women. Each employee will contribute approximately 4 per cent of his annual salary to the pension fund, which sum will be more than matched by the Museum's contribution. Annual income received by each retiring employee will be approximately $1\frac{1}{2}$ per cent of the total salary earned while a member of the pension plan. Supplementing this benefit for future service, additional annual income after retirement has been provided in the amount of one per cent of all past salaries received from Museum service prior to the inception of the pension plan. The plan includes only those employees who have not already passed normal retirement ages. Special provision is being made for those beyond the age of eligibility so that they may be retired upon their own applications. While the pension plan had been under consideration for many years, the expense was heretofore an insurmountable barrier, especially the cost of the pensions for accrued past service. Through the gift of Mr. Marshall Field, a Trustee of the Museum who has long been interested in the institution and the welfare of its employees, the plan has been set in operation with accrued liabilities paid in full. It is perhaps needless to say that the announcement of the plan was received with unanimous approval by the employees of the institution.

Appreciation of the Museum by the public is evidenced by the year's attendance, which totaled 1,410,454 persons, an increase of almost 19,000 over the previous year. Paid admissions, however, declined more than 8 per cent. During 1939 only 5.9 per cent of the visitors at Field Museum paid admission, compared with 6.6 per cent in 1938, and 7.3 per cent in 1937. Steadily decreasing rates of return from investments, and some degree of fear for the future on the part of citizens, resulting in fewer contributions, combine to

make the financial administration of this Museum and other institutions similarly supported an increasingly difficult problem. A recent decision of the Illinois Supreme Court invalidated the so-called "Museums Act" which brought to this institution approximately \$100,000 per year from taxes as a contribution toward its maintenance. A continuation of the splendid educational work, the research, and the service of this institution to the public will depend to an ever-increasing degree on the realization by the public that the institution is operated in their behalf and is worthy of their support.

As was noted in the Report for the preceding year, the Museum's influence is not restricted to the visitors coming to the building, but is extended far beyond them by extra-mural activities. Contact was made with 186,677 children in their schools through lectures presented in classrooms and assemblies by members of the staff of the James Nelson and Anna Louise Raymond Foundation for Public School and Children's Lectures. This Foundation experienced one of its years of greatest progress, and deep appreciation is due to Mrs. James Nelson Raymond for her continued generous support of its activities. The lectures outside the Museum are only part of the Foundation's work. It continued also its spring, summer, and autumn series of free educational motion pictures for children in the James Simpson Theatre of the Museum, conducted many thousands of children on tours of Museum exhibits, and engaged in a wide variety of other educational activities, details of which will be found elsewhere in this Report.

Equally important was the continuation of the extra-mural work of the N. W. Harris Public School Extension. This Department throughout the school year circulates traveling exhibition cases on a bi-weekly schedule among all of Chicago's public schools, and many parochial, private and special schools as well, thus repeatedly reaching approximately 500,000 children. During 1939 the Harris Extension inaugurated a number of improvements and innovations in its service.

Combining the total number of visitors to the Museum with the total of the children reached outside the institution by the Raymond Foundation and the Harris Extension, it is found that the Museum's cultural influence was again extended directly to more than 2,000,000 persons. In addition, there was the usual further extension to incalculable numbers reached through less direct media such as radio programs, publications and leaflets, and articles in newspapers and magazines throughout this and many other countries.

Attendance at special programs presented in the Museum totaled more than 100,000 persons. This figure includes those who attended the spring, summer and autumn series of motion pictures for children provided by the Raymond Foundation in the Simpson Theatre; the audiences at the spring and autumn courses of Saturday afternoon lectures for adults in the Theatre; various special groups which used the Theatre and Lecture Hall; those participating in the daily guide-lecture tours of exhibits for both children and adults; and groups attending the Sunday lecture tours conducted by Mr. Paul G. Dallwig, the Layman Lecturer.

The Museum attracted many special groups of visitors during the year. It was one of three Chicago scientific institutions which acted as hosts to delegates attending the annual meeting of the American Society of Ichthyologists and Herpetologists, September 13-16. Special exhibits for these visitors were arranged at Field Museum and at the other host institutions (the John G. Shedd Aquarium, and the Chicago Academy of Sciences), and open house was held at Locy Hall of Northwestern University. Members of the Marquette Geologists' Association visited Field Museum in a body in February, and were conducted through the exhibits by Mr. Henry W. Nichols, Chief Curator of the Department of Geology, and Assistant Curator Bryant Mather. Several hundred safety patrol boys, selected for merit from schools in many communities of Illinois and Indiana, were brought to the Museum on May 11 under the auspices of the Chicago Motor Club, and conducted on tours of the exhibits by lecturers of the James Nelson and Anna Louise Raymond Foundation. In May the Raymond Foundation attained a new all-time record by extending its guide-lecture service in the Museum to 336 groups, comprising 36,082 individuals. Among these were groups from Michigan, Indiana, Wisconsin, Ohio, Kansas, and Illinois. So many requests were made for this service that eighty-nine groups could not be accommodated because all available time of the personnel was filled before their applications were made.

As for many years past, the Raymond Foundation in December assisted groups of delegates sent to the Museum by the National Congress of Four-H Clubs. These groups consisted of 1,018 boys and girls selected from farms throughout the United States and Canada, brought to Chicago for the International Live Stock Exposition. At the Exposition itself, Field Museum, following another custom of many years, installed an exhibit of several of the portable cases circulated among Chicago schools by the N. W.

Harris Public School Extension, together with photographs of outstanding exhibits in the Museum halls. In September, during the national convention of the American Legion, arrangements were made whereby Legionnaires and their families were admitted free to the Museum upon presentation of special coupons included in ticket books for various Chicago attractions distributed by the Legion.

On January 11, Mr. Stanley Field completed three decades as President of the Museum, an office which he has held continuously since 1909. At the Annual Meeting of the Board of Trustees, held January 16, Mr. Field was again accorded the complete confidence of his colleagues by re-election for his thirty-first term as President. All other Officers of the Museum who served in 1938 were re-elected for 1939. The others are: Colonel Albert A. Sprague, First Vice-President; Mr. James Simpson, Second Vice-President; Mr. Albert W. Harris, Third Vice-President; Mr. Clifford C. Gregg, Director and Secretary; and Mr. Solomon A. Smith, Treasurer and Assistant Secretary.

Mr. Fred W. Sargent was compelled by ill health to tender his resignation as a Trustee. This was regretfully accepted at a meeting of the Board held June 19. Mr. Sargent had been a Trustee since 1929, and had rendered valuable services as a member of the Board.

At a meeting of the Trustees held July 21, four prominent leaders in Chicago's civic activities were elected to membership on the Board, and as Corporate Members of the Museum. The new Trustees are: Mr. Lester Armour, Mr. William McCormick Blair, Mr. Walter J. Cummings, and Mr. Albert H. Wetten. They fill vacancies caused by deaths and resignations which have occurred during a period of more than two years past. Their election brought the Board to its full membership of twenty-one, as provided in the By-Laws, for the first time in many months. Unfortunately, this situation did not last long—the Museum was deprived of one of its most earnest and active Trustees and Officers by the death, on November 25, of Mr. James Simpson, who was Second Vice-President. A resolution adopted by the Trustees in tribute to Mr. Simpson will be found on page 14 of this book, preceding the Report proper.

In recognition of his eminent services to Field Museum, Professor Henri Humbert, Director of the Division of Phanerogams at the Muséum National d'Histoire Naturelle, in Paris, was elected a Corresponding Member. Professor Humbert was especially helpful in carrying out Field Museum's project for the photographing of type specimens of plants in Europe. He provided the Museum

representative, Mr. J. Francis Macbride, Associate Curator of the Herbarium, with working quarters, and extended many privileges and much valuable assistance which contributed greatly to the successful accomplishment of Mr. Macbride's mission.

Two names were added during 1939 to the list of Contributors. They are Mr. Clarence B. Mitchell, of Chicago, and Mr. Michael Lerner, of New York. Mr. Mitchell has devoted much time to a notable project in color photography at the Museum, which resulted in his appointment to the staff as a volunteer worker with the title, Research Associate in Photography. In the course of this work, Mr. Mitchell has paid considerable sums for equipment and supplies, and for the making of plates for the printing of color pictures. Mr. Lerner has presented to the Museum specimens of large and rare fishes, caught through the expert angling of himself and Mrs. Lerner on various expeditions they have conducted. The specimens fill important places in exhibits under preparation for a new hall of fishes.

No new Life Members were elected during 1939, but two Non-Resident Life Members were added to the rolls. They are: Miss Mary Louise Clas, of Washington, D.C., and Mr. Emil A. Siebel, of Lake Villa, Illinois.

Lists of all classes of Museum Members will be found in this Report, beginning on page 145. On December 31, 1939, the total number of memberships was 4,171, which represents a small but encouraging increase over the number at the same date in 1938, which was 4,122. The Museum is deeply appreciative of all support given it by citizens who hold memberships. They are a vital factor in the continuance of the Museum's program for the advancement of science and education, and are making a real contribution to the promotion of culture in Chicago.

With regret is noted the death, on April 10, of Dr. Adolf Carl Noé, who since 1933 had been Research Associate in Paleobotany on the staff of the Museum. Dr. Noé, who was Professor of Paleobotany at the University of Chicago, became intensely interested in the work of the Museum during the construction by the Department of Botany of the Carboniferous forest group in Ernest R. Graham Hall. Dr. Noé's researches and publications in the field of coal formations and coal balls are well known to scientists. He placed his collections and his scientific knowledge freely at the disposal of the Museum.

Work proceeded throughout the year on installations of new exhibits, and reinstallations and improvements of exhibits installed in other years. In each of the departmental reports contained in

this book there will be found a section giving details of these activities. A few of the more important installations deserve special brief mention here.

An entire new exhibition hall, Hall M, was opened in the Department of Zoology. It is devoted to the exhibition of approximately 2,000 specimens of lower invertebrates, which previously were but sparsely represented in the Museum. In the preparation of this hall, a new and improved type of lighting was adopted, using the recently developed tubular fluorescent lamps, which have notable advantages for certain types of exhibits. The new lamps provide a better diffusion of light, and show the exhibits in their true colors. A new group in the Hall of Birds (Hall 20) shows the red grouse of the British Isles in a characteristic scene representing the Scottish Highlands (Plate 10). This group is of special interest because the bird is a prime favorite with sportsmen.

A notable addition to the Hall of Plant Life (Hall 29) was a diorama showing the typical spring flora of the Chicago region.

Special exhibits displayed in Stanley Field Hall during the year included one during the Easter season of an assortment of especially interesting birds' eggs, and one of selected specimens from the Bishop Collection of Birds, shown for several weeks after the acquisition of that collection. The exhibit of birds' eggs attracted so much attention that it was later transferred to Hall 21 (Systematic Collection of Birds) as the nucleus of a permanent exhibit which may be enlarged in the future.

The new type of fluorescent lighting used in Hall M was installed also in Hall 21 (Systematic Collection of Birds), and Hall 30 (Hall of Chinese Jade), with excellent results in bringing out the true colors and other features of the exhibited specimens. It is planned to substitute this type of lighting, as conditions permit, in all installations where case-lighting rather than hall-lighting is used.

To all those friends of the Museum who made gifts of money and of material for the scientific collections and the Library, grateful acknowledgment is herewith extended. Among those who contributed funds during the year are the following:

Mr. Marshall Field, member of the Board of Trustees, made gifts of cash and securities to the munificent total of \$508,771.19. A large part of his generous contributions was for the purpose of establishing the new Pension Plan for Employees of the Museum, to which reference has already been made. The other funds received from Mr. Field were given to meet the huge deficit incurred by

maintaining the traditional high standards of Museum operation and progress in the face of declining income.

From the estate of the late Martin A. Ryerson the Museum received \$120,125.44. From the estate of the late Mrs. Carrie Ryerson, \$27,500 in cash and securities was received, as an addition to the sums previously received from this bequest as reported in 1938.

An anonymous donor turned over to the Museum the sum of \$30,000 in cash.

Mr. Stanley Field, President of the Museum, made gifts to the Museum totaling \$17,239.60, of which part was for the financing of expeditions, and part for purchases of much-needed equipment.

A contribution of \$5,000, in addition to the gift reported in the 1938 Annual Report, was received from Mr. Wallace W. Lufkin.

From the estate of the late Cyrus H. McCormick the Museum received \$10,000, resulting from a bequest.

Gifts totaling \$6,000 were received from Mrs. James Nelson Raymond for the support of activities of the James Nelson and Anna Louise Raymond Foundation for Public School and Children's Lectures, which she founded in 1925.

Mr. Leon Mandel was the donor of sums totaling \$1,200. Mr. Clarence B. Mitchell contributed \$1,000. Mrs. Clarence C. Prentice gave \$1,000 for the maintenance of the Leslie Wheeler Fund, designated for the purchase of additions to the collection of birds of prey. Mr. Boardman Conover contributed \$400 toward the expeditionary program.

Under their agreement with the Museum, the Jewish Welfare Fund, of Chicago, gave \$1,000, and the Emergency Committee for the Aid of Displaced German Scholars gave \$750, toward the salary of a scientist employed on the Museum staff through special arrangements. The balance of this salary is paid from Museum funds.

Other sums of varying amounts were received as gifts from Mr. Carl Colby, Mrs. Hermon Dunlop Smith, Mr. C. R. Harrington, and Mr. Daniel M. Schuyler.

The many gifts of material for the collections of the Museum are reported upon in detail in the departmental sections of this book, and in the complete List of Accessions which begins on page 120. A few outstanding ones have been selected for mention here, as follows:

The famous Bishop Collection of more than 50,000 North American birds, one of the largest and most important collections ever assembled, was acquired by purchase with funds made available by

a donor who desires to remain anonymous. This great collection was the last of its kind which had not passed to a public institution. It includes representatives of nearly all known forms of birds found in every section of North America north of Mexico. The collection represents forty years of constant and intensive effort on the part of its former owner, Dr. Louis B. Bishop, of Pasadena, California, and numerous professional ornithologists who have been associated with him at various times. Among especially important items in the collection are eleven type specimens, and a number of representatives of species now extinct, as well as other species which have become very rare and difficult to obtain. Prior to the acquisition of this collection, Field Museum's efforts in ornithological research were devoted principally to the birds of Central and South America, Africa, and other foreign localities. The North American field had been left largely to other institutions, although Field Museum did have a collection which was extensive enough to be regarded as important. Addition of the Bishop Collection fills a large gap in the collections of birds, and gives this institution one of the most comprehensive North American bird collections either in this country or abroad. This is of tremendous importance to scientists and students of ornithology, because of the unusual research opportunities it affords. A detailed knowledge of North American birds is fundamental to all ornithological research in evolution, variation, and all theoretical fields of biology.

A notable gift was that of eleven pieces of ancient bronze movable type, cast in Korea but made to print Chinese characters (Plate 4), from Mr. Thomas E. Donnelley, of Chicago. Mr. Donnelley presented also thirty-three pieces of old wooden type.

Mr. Michael Lerner, of New York, who in the past has made noteworthy contributions to the fish collections, continued his generous co-operation with the Museum in 1939 by providing the means for the making of special color films and slides needed for the preparation of a habitat group.

From the Department of Botany of the University of Chicago, Field Museum received a gift of more than 2,200 herbarium specimens. These represent a notable reference collection assembled by the late Professor A. C. Noé, who, in addition to his position on the university faculty, was Research Associate in Paleobotany on the Museum staff. The collection includes important plants from many parts of the world, and forms a most valuable addition to the Herbarium of Field Museum.

Again, as in many past years, the Chicago Zoological Society, John G. Shedd Aquarium, Lincoln Park Zoo, and General Biological Supply House contributed frequently and generously to the collections of the Department of Zoology. Many specimens were obtained also through the use of money made available by the Leslie Wheeler Fund and the Emily Crane Chadbourne Fund.

Other notable contributions to the collections of the Museum were received from Dr. Henry Field, Mr. Stanley Field, Dr. Wilfred H. Osgood, Dr. Earl E. Sherff, Mr. Hermann C. Benke, Dr. S. M. Lambert, Mr. Paul C. Standley, Mr. Loren P. Woods, Dr. Julian A. Steyermark, Dr. Paul S. Martin, and Mr. Clifford C. Gregg.

From the Chicago Park District the Museum received sums aggregating \$86,093.85, representing its share, authorized by the state legislature, of collections made during 1939 under the tax levies for 1938 and preceding years. As has already been mentioned, the legislative act under which such tax money has been paid to Field Museum and other museums was invalidated by the Illinois Supreme Court during the year. It is hoped that in 1940 the State Legislature will take steps to provide for restoration of the Museum tax on a basis acceptable to the taxpayers and the courts.

The many difficulties in the financial administration of an institution of this kind, combined with an outlook that is not encouraging, have prompted those in charge to review carefully everything in this field in order to be in as sound a position as possible should circumstances change for the worse. The Finance Committee of the Board of Trustees has carefully checked the investment portfolio, and after painstaking study has ordered many changes for the purpose of insuring a reasonable income while protecting principal. The sum of \$26,600, advanced by the investment account in 1938 to liquidate a bank loan, was returned to the investment account in 1939 from operating funds. This restitution was made possible through the generosity of Mr. Marshall Field. As a result there are no obligations against the operating account except current bills. Also through the gift of Mr. Marshall Field it was possible to create a reserve for extraordinary building repairs and mechanical plant renewals and replacements. The lack of such a fund has been a matter of serious concern for a number of years, and might have been most embarrassing except for the unusual efficiency of the Chief Engineer and General Superintendent in maintaining their equipment.

With the full approval of the heirs of the late Mr. Chauncey Keep, the Board of Trustees authorized the use of income from the

Chauncey Keep Yale University Chronicles of America Fund for the purchase of specimens, with the understanding that the principal and accretions of this fund, amounting to \$17,000, shall remain intact. Credit will be given the fund for all purchases made under this authorization.

In keeping with the spirit of the new Pension Plan for Museum Employees, the group life insurance policy held by the institution was amended in several respects. In order that protection might be afforded all employees, a maximum benefit of \$3,000 was established, and within that limit benefits were arranged equal to or slightly exceeding one year's salary of the insured. A clause was inserted reducing to \$1,000 the insurance benefit of any employee at the time he retires on pension. This clause was inserted because the purpose of the insurance is to provide protection for dependents, who will normally be old enough to care for themselves when an employee becomes a pensioner.

Revisions were made in the group contract with the Plan for Hospital Care, Inc., making available greater benefits than hitherto for Field Museum employees and their families. The plan provides hospitalization, when needed, for subscribing employees and their families, and the limits of such hospitalization were increased by the revisions in terms. Subscription is at a nominal cost, and entirely voluntary. The plan is endorsed and sponsored by most of the principal hospitals and medical authorities, and has the support of many civic leaders. A large proportion of the Museum personnel have taken advantage of the opportunity to subscribe, and a number have already had occasion to use the services provided.

The Museum had ten expeditions in operation in the United States and foreign countries during 1939, and considerable field work on a smaller scale was also conducted. As in the preceding year, this extension of activity became possible only through the generosity of patrons who sponsored the most important expeditions. Without such assistance, the Museum would have been unable to allocate adequate funds for this purpose.

Of the expeditions at work in 1939, two are of especial importance: the Magellanic Expedition of Field Museum, and the ninth Field Museum Archaeological Expedition to the Southwest. Both of these were sponsored by Mr. Stanley Field. The Magellanic Expedition, which is under the leadership of Dr. Wilfred H. Osgood, Chief Curator of the Department of Zoology, will continue its work for several months in 1940. It is collecting specimens over a broad

field, including parts of southern Peru, Bolivia, Chile, the shores of the Straits of Magellan, and the island of Tierra del Fuego at the foot of South America (noted as one of the world's windiest spots). This expedition began work in July. The first members entering the field were Mr. Colin C. Sanborn, Curator of Mammals, Mr. Karl P. Schmidt, Curator of Amphibians and Reptiles, and Mr. John Schmidt, field assistant. Dr. Osgood joined the party in October. Mr. Karl Schmidt completed his part of the work about the middle of November, thereafter returning to the Museum, but the other members of the expedition remained in the field. In addition to making comprehensive collections of the fauna of the regions indicated, this expedition has as a prime objective the assembling of data to supplement the work of Charles Darwin, who pioneered in scientific research in the more remote parts of the area.

The Field Museum Archaeological Expedition to the Southwest was led by Dr. Paul S. Martin, Chief Curator of the Department of Anthropology. He was assisted by several other archaeologists, and a party of excavators. In eight previous years Dr. Martin had worked on sites of early North American cultures in southwestern Colorado, and in 1939 his expedition operated in a new area, in the vicinity of Glenwood, New Mexico. There the ruins of early Mogollon culture were investigated. A large collection of artifacts was obtained for the Museum's exhibits and study collections, and Dr. Martin found traces of the cultural developments that took place during a 1,500-year period which had previously been a blind gap to archaeologists.

The Sewell Avery Botanical Expedition to Guatemala, sponsored by Mr. Sewell Avery of the Board of Trustees, in 1939 completed its work, which was begun in the preceding year. The expedition was conducted by Mr. Paul C. Standley, Curator of the Herbarium. A comprehensive collection of the flora of many parts of the country was obtained, and data were assembled for proposed scientific publications. Operations were conducted in selected localities in each principal type of region found in Guatemala: volcanoes, alpine meadows, high mountain slopes, rain forests, deserts, etc.

Late in the year another botanical expedition was sent to Guatemala. It is sponsored by President Field, and is being conducted by Dr. Julian A. Steyermark, Assistant Curator of the Herbarium. Its object is to collect specimens and data to supplement the findings of the Sewell Avery Expedition, and it will continue operations into 1940.

The Field Museum Paleontological Expedition to Western Colorado collected fossil remains of the early mammals of Paleocene and Eocene formations in Mesa, Garfield, and Gunnison counties. Its findings included an important genus hitherto unknown to paleontologists. Mr. Bryan Patterson, Assistant Curator of Paleontology, was the leader. He was accompanied by Mr. James H. Quinn, Assistant in Paleontology, and several other collectors from Chicago and from the local Colorado region.

An expedition to Florida collected specimens of marine animals, and made studies of the invertebrate life of the region. Dr. Fritz Haas, Curator of Lower Invertebrates, and Staff Taxidermist Leon L. Walters were the collectors. Operations were conducted on the Atlantic and Gulf coasts. President Field sponsored the expedition.

A paleontological expedition to South Dakota and Nebraska, sponsored by President Field, and led by Mr. Paul O. McGrew, Assistant in Paleontology, collected skeletal material representing various species of extinct mammals in Oligocene, Miocene, and Pliocene fossil beds. Mr. McGrew was accompanied by Mr. John M. Schmidt, Mr. Orville Gilpin, and local collectors from the areas visited.

Dr. Francis Drouet, Curator of Cryptogamic Botany, and Mr. Donald Richards, of the Hull Botanical Laboratory of the University of Chicago, conducted a botanical expedition to Mexico and the southwestern United States. President Field was the sponsor. The field of operations included parts of New Mexico, Arizona, Sonora, and Lower California. The object of this expedition was the collecting of the flora of the regions indicated, with special attention being given to an investigation of the algal and bryophyte flora.

The Sewell Avery Zoological Expedition to British Guiana, which had begun operations in July, 1938, completed its work and returned to Chicago early in 1939. Mr. Sewell Avery was sponsor, and Mr. Emmet R. Blake, Assistant Curator of Birds, was the leader. Mr. Blake was assisted by a party of local collectors and native boatmen. The field of operations was the region along the Courantyne River near the boundary of Dutch Guiana, the New River, and tributaries far in the interior. Despite an unfortunate accident to a boat carrying a large part of the expedition's collections, a good representation of the fauna of the little known region arrived safely at the Museum.

Birds, small mammals, and reptiles of the Yucatan Peninsula were collected for Field Museum by an expedition sponsored and conducted by Mr. Melvin Traylor, Jr., and Mr. Wyllys Andrews.

Field work on a more limited scale was carried on from time to time by various members of the Museum staff, including: botanical collecting in Venezuela by Mr. Llewelyn Williams, Curator of Economic Botany, who is in that country on an extended leave of absence from Field Museum to assist in making a botanical survey for the Venezuelan Government; zoological collecting in England and Scotland by Mr. Colin C. Sanborn, Curator of Mammals, who was in Europe for several months as a Fellow of the Guggenheim Foundation; ornithological work in the Chicago area, conducted by Mr. Emmet R. Blake, Assistant Curator of Birds, and Mr. Frank H. Lett, Preparator of Accessories; mineralogical collecting in Pennsylvania, New Jersey, and New York state, conducted by Mr. Bryant Mather, Assistant Curator of Mineralogy; zoological collecting in Florida conducted by Dr. Wilfred H. Osgood, Chief Curator of Zoology, and Mr. Alfred C. Weed, Curator of Fishes; and botanical and zoological collecting in various regions of Missouri, conducted by Dr. Julian A. Steyermark, Assistant Curator of the Herbarium, and Mr. Loren P. Woods of the staff of the Raymond Foundation.

The project for the making of photographs of type specimens of plants in the leading herbaria of Europe, which has been under way since 1929, was continued through most of 1939 by Mr. J. Francis Macbride, Associate Curator of the Herbarium. Negatives of more than 40,000 type specimens of plants, chiefly of South American species, are now on file in the Museum, and prints from them are made available, at cost, to botanists and institutions all over the world. This is a service widely recognized for its inestimable value to systematic botany. Its importance is especially emphasized at this time, as many of the European collections face possible destruction in the war which began late in 1939. The negatives at Field Museum thus might become the only remaining records of many plants of scientific and historic importance. Mr. Macbride returned to the Museum December 18.

Mr. Leon Mandel generously made arrangements whereby Mr. Rudyerd Boulton, Curator of Birds, and Mr. D. Dwight Davis, Assistant Curator of Anatomy and Osteology, left Chicago on December 26 to join an expedition scheduled to sail January 1, 1940, from Havana. This expedition, to be conducted aboard Mr. Mandel's yacht *Buccaneer*, will explore out-of-the-way cays, islands, and rocks in the Caribbean Sea. Birds, mammals, and reptiles will be collected in these places, and fishes and other marine creatures will be sought

in the waters surrounding them. Mr. Mandel himself will participate in the collecting, as he has done on other expeditions he has sponsored for Field Museum. Another collector will be Captain William Gray, of Palm Beach, Florida.

Twenty-eight technical scientific publications, circulated internationally among museums, libraries, other institutions, and individual scientists, were issued by Field Museum Press. In addition, two popular leaflets for lay readers were published, and printing of guidebooks, handbooks, and miscellaneous matter was continued as usual on a large scale. Outstanding in importance was the publication of Parts I and II of *A Bibliography of Birds*, a comprehensive work of interest to ornithologists everywhere. It was compiled by Dr. Reuben Myron Strong, Chairman, Department of Anatomy, Loyola University Medical School, Chicago.

The twelve issues of *Field Museum News*, the monthly bulletin for Members of the Museum, appeared in a new and improved typographical "dress," easier to read. The number of pages in each issue was increased from four to eight, making possible a more extensive and thorough coverage of the activities of the Museum. The increased size of the *News*, of course, placed an additional burden on the Division of Printing. News about Museum activities was released to the daily press regularly, resulting in the usual quota of publicity not only in Chicago but throughout the nation, and frequently in foreign countries as well.

The Book Shop of Field Museum, which was established in 1938, continued throughout 1939 to operate with the success that marked its first months. The sales, both to visitors at the Museum, and by mail orders, indicate that the services it offers are welcome to the public. All books which it distributes, whether for adults or children, are first passed upon by qualified members of the Museum's scientific staff, thus assuring that books of doubtful authenticity or accuracy are not offered.

Toward the end of the year, Field Museum became a member of the University Broadcasting Council, which is responsible for many of the better types of educational and cultural programs presented on the radio. In this organization the Museum is associated with such other institutions as Northwestern University, De Paul University, and the Art Institute of Chicago. Plans were made for presentation, in 1940, of a series of educational broadcasts on subjects within the scope of the four scientific Departments of the Museum. These will be presented over one of the networks of the National

Broadcasting Company. The broadcasting company is generously co-operating in the venture, making radio time available, and supplying the personnel and facilities for script writing and dramatic presentation.

During the year lecturers from the Raymond Foundation co-operated with the Zenith Radio Corporation in staging some experimental broadcasts for radio and television. In the course of a series of six broadcasts, stereopticon slides were projected, Museum specimens were demonstrated and explained, and live reptiles were exhibited to the television audiences. It is felt that these experiments will be of great value in determining the possibilities of television as a medium of instruction, as well as in developing the technique of this medium of disseminating information.

The James Nelson and Anna Louise Raymond Foundation for Public School and Children's Lectures co-operated, as in 1938, with the Public School Broadcasting Council by arranging special programs at the Museum as "follow-ups" to the Council's science radio programs. Informal meetings were held in the lecture hall for representative pupils selected from the upper grades of many schools. At these gatherings, slides were shown, specimens were made available for study, and Museum methods were demonstrated. The groups were also conducted on tours of exhibits, and mimeographed sheets containing text and drawings pertaining to the subjects discussed were distributed to them.

In June the Museum participated in a conference on industrial recreation sponsored by University College of Northwestern University, with the co-operation of the Adult Education Council and numerous other organizations interested in the better use of leisure time. A special exhibit outlining the activities of the Museum was displayed, and Mr. Loren P. Woods, of the Raymond Foundation staff, was in attendance to give further information to the delegates.

Field Museum was represented in exhibits at the New York World's Fair and at the Golden Gate International Exposition at San Francisco. To the New York Fair the Museum sent an Egyptian mummy which was used in an exhibit of the General Electric X-ray Corporation to demonstrate the application of the fluoroscope in scientific research. An elaborate installation was arranged whereby visitors were enabled alternately to view the mummy's exterior and then, through the fluoroscope, its interior. Field Museum was invited to participate because of the pioneer work conducted at this institution over a period of several years, beginning in 1925, in

developing and applying successfully a technique for X-ray photography on mummies and other types of specimens not previously studied in this manner. The exhibit in New York, at which credit was given the Museum for its part, attracted approximately 4,000,000 persons, according to the tally kept by the General Electric Company, and it resulted in nation-wide publicity. At the San Francisco exposition the Museum was represented by a collection of ethnological objects from Borneo, Java, New Guinea, Sumatra, the Cook Islands, Celebes, and other South Pacific islands. These were exhibited in the exposition's Department of Fine Arts.

Field Museum was host to a long list of distinguished visitors during 1939. On two occasions members of European royal houses were received. On April 25, Their Royal Highnesses, Crown Prince Frederik and Princess Ingrid, of Denmark, were guests of the institution. They were accompanied by Mr. Reimund Baumann, the Danish Consul. On May 4, His Royal Highness, Crown Prince Olav, of Norway, was a visitor to the Museum. With the Prince came Mr. Sigurd Maseng, Consul of Norway. Among the other distinguished visitors of the year were the following: Mr. Russell Plimpton, Director of the Institute of Art, Minneapolis; Mr. Paul Frank, of the National Park Service staff at Zion National Park, Utah; Mr. Michael Lerner, of New York City; Dr. Paul Ganz, a professor at the University of Basel in Switzerland, and President of the International Commission on the History of Art; Colonel Richard Meinertzhagen, noted British ornithologist; Professor E. N. Transeau, head of the Department of Botany, Ohio State University; Dr. Osvald Siren, Curator of Oriental Art at the National Museum in Stockholm, Sweden; Dr. R. A. Falla, Director of the Canterbury Museum, Christchurch, New Zealand; Dr. Watson Davis, Managing Director of Science Service, Washington, D.C.; Mr. Lorenz Hagenbeck, one of the owners of the Hagenbeck Tierpark, of Stillengen, Germany; Dr. Norman C. Fassett, Curator of the Herbarium of the University of Wisconsin; Mr. T. A. Monmayeda, Director of the Japan Institute, New York; Mr. Taneo Taketa, Manager of the New York office of the South Manchurian Railway; Mr. L. D. Bestall, Director of the Hawkes Bay Art Gallery and Museum, Napier, New Zealand; Mrs. Nicholas (Alice Roosevelt) Longworth, widow of the late Speaker of the House of Representatives of the United States, and her daughter; the Duke and Duchess of Sutherland, of London; Dr. Dillman S. Bullock, of Angol, Chile; Dr. C. R. Ball, of Washington, D.C., an authority on willows; Mrs. M. Quennell, Hon. A.R.I.B.A.,

who is the Director of the Geffrye Historical Museum, in London, England; William J. Morden, Associate in the Department of Mammals at the American Museum of Natural History, New York; Lieutenant Colonel J. H. Patterson, of the British Army (retired), who shot the man-eating lions of Tsavo now exhibited in Field Museum, and is author of an interesting book about these famous marauders; Dr. Robert Allen Cooley, well-known entomologist specializing in ticks at the Rocky Mountain Laboratory, Hamilton, Montana; Mr. J. B. Kinlock, of the Department of Forestry of British Honduras; Mr. Charles R. Knight, of New York, the artist who painted the series of prehistoric life murals in Ernest R. Graham Hall of Field Museum; Mr. Newton B. Drury, Secretary of the Save-the-Redwoods League, of California; Dr. Hu Chao-chun, Director, City Museum of Greater Shanghai, China; Mr. Herbert N. Hale, Museum Director of the Public Library, Museum, and Art Gallery of South Australia, at Adelaide; Mr. Chauncey J. Hamlin, President of the Buffalo Museum of Science; Mr. Victor Fisher, Ethnologist of the Auckland (New Zealand) Museum; Dr. Herbert Friedmann, Curator of Birds at the United States National Museum, and President of the American Ornithologists' Union; Dr. D. Rubin de la Borbolla, Director, Escuela Nacional de Ciencias Biologicas, Mexico; Dr. T. H. Goodspeed, Professor of Botany at the University of California; Dr. Frank D. Kern, of Pennsylvania State College, who is one of the foremost specialists on fungi; Mrs. Gertrude Bass Warner, Director of the University of Oregon Museum of Fine Arts, Eugene, Oregon; Professor V. Gordon Childe, noted anthropologist of the University of Edinburgh, Scotland; Mr. William H. Phelps, ornithologist, of Caracas, Venezuela; Dr. G. T. Velasquez, Professor of Botany, University of the Philippines, Manila; Mr. Lloyd Weaver, of the Marine Biological Laboratory, Woods Hole, Massachusetts, and the Department of Botany, Columbia University, New York; Mrs. Oscar Straus, of New York, who sponsored the Straus West African Expedition of Field Museum in 1934; Miss Florence Guggenheim Straus, who accompanied Mrs. Straus; Mr. Stewart Springer, of the Bass Biological Laboratories, Englewood, Florida; Mr. Theodore Sizer, Associate Director, Gallery of Fine Arts, Yale University; Professor C. N. Gould, of Santa Fe, New Mexico, head of the Southwest Division of the United States National Park Service; Mrs. V. Goschen-de Watteville, of Berne, Switzerland, who with her father conducted an expedition to central Africa which resulted in extremely important zoological collections for the Natural History Museum of Berne; Miss Martha van Bomberghen of Brus-

sels, member of the Conseil de Direction of the Institut Belge des Hautes Etudes Chinoises, Secretary of the Société Belge d'Etudes Orientales, and Editor of *Mélanges Chinoises et Bouddiques*; Dr. E. J. Lindgren, well-known anthropologist of Cambridge University, and Honorary Editor of *Man*; Mr. A. R. Penfold, Curator and Economic Chemist of the Sydney Technological Museum in Australia; Mr. S. Koperberg, Secretary of the Java Institute for Promoting Javanese Art and Culture, Director of the Museum Sono Boedjo, and Secretary of the School for Javanese Arts and Crafts; Dr. Herman Johannes Lam, Director of the National Herbarium, Leiden, Netherlands; Dr. Levi W. Mengel, Director Emeritus of the Public Museum and Art Gallery of Reading, Pennsylvania; Dr. F. M. Pagán, head of the Department of Botany, University of Puerto Rico; Professor Maximino Martinez, noted botanist of Mexico City, formerly on the staff of the National Museum of Mexico; Dr. Edgar Anderson, of the Missouri Botanical Garden; Dr. Ralph Linton, formerly on the staff of this institution's Department of Anthropology, now chairman of the Department of Anthropology at Columbia University; Dr. T. H. Kearney, of the Department of Agriculture, Washington; Dr. Hermon C. Bumpus, noted zoologist, former Director of the American Museum of Natural History, New York, and now Chairman of the Educational Advisory Board, National Parks Service; Dr. D. C. Graham, well-known archaeologist and ethnologist, and a professor at the West China Union University, Cheng-tu, Szechwan; Professor Owen Lattimore of the Johns Hopkins University, Baltimore, who is editor of *Pacific Affairs*; Mr. James Roosevelt, of Hollywood, California; Mr. A. S. Coggeshall, Director of the Santa Barbara (California) Museum of Natural History; Dr. Edson S. Bastin, Chairman of the Department of Geology and Paleontology at the University of Chicago; Professor Moholy-Nagy, Director of the School of Design, Chicago; Mr. David Rockefeller, who is engaged in economic studies at the University of Chicago; and Count Benedict Tyszkiewicz, of Poland.

The School of the Art Institute of Chicago is constantly drawing upon the facilities of Field Museum. In the following classes of the professional art school, problems were given which required research work in Field Museum: History of Art I; History of Art II; Pattern Design; Composition and Research; Drawing I (introductory courses).

In 1939, five different sections in the Saturday Junior Department (classes for children) worked in groups under instructors'



PIT-HOUSE DURING EXCAVATION

Near Reserve, New Mexico

Field Museum Archaeological Expedition to New Mexico, 1939

supervision in Field Museum as a part of the regular curriculum. Needless to say, this Museum is delighted to co-operate with its neighbor institution.

New, improved uniforms for the Museum guard force were adopted during the year. Comfort, coolness, and better appearance are emphasized in the new type. The high military collar, which was a feature of every uniform worn since the founding of the Museum, was discarded in favor of the open lapel collar. The color was changed from the severe military olive drab to blues of harmonizing shades for coat and trousers. Gold buttons and braid complete the ensemble. During the summer, the caps are topped in white.

During the course of the year Field Museum signed a contract under which it supplies the necessary steam for heating the new Administration Building of the Chicago Park District, located immediately south of the Museum. This contract is, in fact, an additional esthetic contribution to Chicago inasmuch as it makes unnecessary the erection of another heating plant on the lake front with an additional smokestack on Chicago's horizon. The heating of the John G. Shedd Aquarium, another neighboring institution, and the stadium in Soldier Field, has been taken care of in similar fashion since their erection some years ago. Temporary heating service to the Administration Building was begun on February 8, while it was still in the process of construction. The Museum furnished 7,481,505 pounds of steam to that building, as well as 13,003,488 pounds to the Aquarium, and 13,432,523 pounds to Soldier Field.

Several new appointments to the staff of the Museum were made during 1939:

Mr. Bryant Mather joined the staff as Assistant Curator of Mineralogy. He is a graduate of the Johns Hopkins University, where he studied under some of the outstanding authorities of the mineralogical world. Prior to coming to the Museum, he was engaged in mineralogical work for the United States Geological Survey and the National Park Service, and served for a time as Curator of Mineralogy in the Museum of the Natural History Society of Maryland, at Baltimore.

Mr. Henry Herpers, a graduate of the Massachusetts Institute of Technology, was appointed Assistant Curator of Geology. He has specialized in chemistry, and much of his time will be devoted to the chemical laboratory in the Museum's Department of Geology.

Mr. James R. Shouba was employed to assist the General Superintendent of the Museum.

Dr. Louis B. Bishop, of Pasadena, California, well-known in ornithological circles as the founder of the extensive Bishop Collection of Birds which, as has been previously stated, came into the possession of the Museum in 1939, accepted an honorary appointment to the staff of the Museum as Research Associate in the Division of Birds. Dr. Bishop will continue research upon these birds, to the collecting of which he has devoted a major portion of his time during the past forty years.

Mr. Edgar G. Laybourne, Assistant Taxidermist, resigned to accept a position in Hawaii.

On December 31, several Museum employees were retired under the new pension program instituted earlier in the year. Those retired are: Miss Margaret M. Cornell, Chief of the James Nelson and Anna Louise Raymond Foundation for Public School and Children's Lectures; Miss Rose J. Watson, Departmental Librarian and Secretary to the Chief Curator of Anthropology; Mr. Thomas Mason, of the Division of Engineering, and Mr. Valerie Legault, preparator in the Department of Geology. Miss Cornell had joined the staff in 1926, and had become Chief of her Division in 1929. Under her supervision the Raymond Foundation expanded both in number of personnel and in the scope of its activities. Miss Watson had been employed at the Museum since 1907, serving under three Chief Curators of Anthropology—the late Dr. George A. Dorsey, the late Dr. Berthold Laufer, and the incumbent Chief Curator, Dr. Paul S. Martin. Mr. Mason joined the staff as Chief Engineer in 1896, and was one of the oldest men in continuous service of the institution. During the entire period when the Museum was located in Jackson Park, Mr. Mason continued as Chief Engineer, giving up that title and responsibility when the care of a new and larger plant and a new building confronted him at an age when many men retire from active service. Mr. Mason chose to remain in the Division of Engineering, however, and had passed his eightieth year when he retired. Mr. Legault came to the Museum in 1906. For some years he served in the N. W. Harris Public School Extension, and since 1924 had been charged with the mechanical side of the preparation of exhibits in the Department of Geology.

Mr. A. J. Thompson, Captain of the Fire Department in the old building, and more recently in charge of janitorial work at the

Museum, was placed on the pension roll, effective from January 1, 1939. He had been a Museum employee since 1894.

Mr. David Gustafson, who came to Field Museum in October, 1937, to assist in editorial work and proofreading on Parts I and II of *A Bibliography of Birds*, terminated his temporary employment at the Museum on December 31, by virtue of the completion and publication of the two volumes.

As for several years past, the Museum was indebted for assistance in its work of research and in various other activities by a loyal group of volunteer workers. The names of these men and women, whose services have been of inestimable value, will be found in the List of the Staff at the beginning of this book. They are designated by the titles "Research Associate" and "Associate," which distinguish them from salaried members. An exception is the title "The Layman Lecturer," held by Mr. Paul G. Dallwig, who also serves without compensation. Among these volunteers, Miss Claire K. Nemec, who was Associate in the Division of Lower Invertebrates, discontinued her work upon her marriage during the year.

Notable progress was made in the biological research project being conducted on the giant panda as a result of the receipt of the first complete carcass available for scientific dissection. The specimen in question, which came from the Chicago Zoological Society, and was known as "Su-lin" during its life at that society's zoological park at Brookfield, Illinois, is being thoroughly studied by Mr. D. Dwight Davis, Assistant Curator of Anatomy and Osteology. An interesting development during the year was the discovery that this panda, which from all external indications during its life had been thought to be a female, was actually a male. It was thus learned that giant pandas should be included among those several kinds of animals known to zoologists in which the evidences of sex are so concealed that it is difficult to distinguish males from females by external examination only.

From an experiment conducted at Field Museum in 1938, there was a further interesting development in 1939. The pink lotus plant of the Orient (*Nelumbium Nelumbo*), which, as reported in the previous year, was germinated in the laboratories of the Department of Botany from one of some ancient seeds which had lain dormant for a period estimated between 300 and 500 years, continued to grow, and in the spring of 1939 it reached full blossom with the appearance of several large pink flowers characteristic of the species. This

occurred at the Conservatory of Garfield Park, to which the plant had been transferred for further cultivation.

Specimens, from the collection of Field Museum, of the Pultusk (Russian Poland) meteorite that fell in 1868, have played an important role in a program of research which is leading to more definite knowledge of the ages of the earth, the solar system, and the universe. Dr. Robley D. Evans, a well-known physicist on the staff of the Massachusetts Institute of Technology, at Cambridge, and his colleagues in the Department of Chemistry there—Dr. Walter C. Schumb and Miss Jane L. Hastings—used these specimens in investigations into the relative amounts of the isotopes of radioactive elements in both meteoritic and terrestrial materials. The Museum recently published the results of part of their research.

Mr. Colin C. Sanborn, Curator of Mammals, who was appointed a Fellow of the John Simon Guggenheim Foundation in the spring of 1938, returned from Europe in March, 1939, after seven months of study overseas under his fellowship. The greater part of this period was spent at the British Museum (Natural History), working on a taxonomic revision of the horseshoe bats. In connection with this study, Mr. Sanborn also visited museums in Edinburgh, Amsterdam, Leiden, and Paris. Two weeks were spent in Scotland collecting material for the red grouse habitat group which was completed during the year.

Mr. Llewelyn Williams, Curator of Economic Botany, on leave of absence to aid the government botanist, Dr. Henry Pittier, in botanical exploration of Venezuela, reported during the year on a journey of exploration he made from Caracas across the Venezuelan Guiana, by way of Ciudad Bolivar and La Paragua. Much of this trip was in canoes on the Caroni River in regions which had been very little explored botanically. Mr. Williams was accompanied by Captain Felix Cardona of the Venezuelan Frontier Commission.

Dr. Samuel J. Record, Research Associate in Wood Technology on the staff of Field Museum, and Professor of Forest Products at Yale University, was appointed Dean of the university's School of Forestry, a signal honor, and a tribute to his high professional eminence.

Staff Taxidermist John W. Moyer is author and publisher of a book, *Lessons in Museum Taxidermy*, which appeared during 1939. It is intended as an aid both to amateurs who wish to mount birds, mammals, fishes, etc., as a hobby, and to persons who wish to train themselves in taxidermy as a profession.

A textbook on fungi, for upper elementary grade school pupils, by Mrs. Leota Gregory Thomas of the Raymond Foundation staff, was published during the year by the American Education Company, of Columbus, Ohio, under the title *Seedless Plants*. The book is of a type known as a "unit study book" and has found a ready acceptance among many educators and school officials.

Members of the staff of Field Museum visited other scientific institutions for special studies, attended a number of important meetings held by various learned societies, and frequently were guest speakers before various organizations, or on radio programs. Mr. Sharat K. Roy, Curator of Geology, visited leading museums and universities in the east to check the results of his research on the paleontology of Baffin Land with the work of other paleontologists. On August 18 he gave a radio talk on meteorites over station WCFL. Mr. Rudyerd Boulton, Curator of Birds, attended the annual meeting of the American Ornithologists' Union, held at Berkeley, California, in June. He is treasurer of the organization, and business manager of its quarterly journal, *The Auk*. Later in the year, Mr. Boulton spent several weeks at the American Museum of Natural History, New York, in special research on the collections of birds from Angola (Portuguese West Africa). At the request of the Editors of *The 1939 Britannica Book of the Year*, an annual volume issued by the publishers of *The Encyclopedia Britannica*, Dr. Wilfred H. Osgood, Chief Curator of the Department of Zoology, prepared the section devoted to reviewing the accomplishments of natural history museums all over the world. Dr. Paul S. Martin, Chief Curator of the Department of Anthropology, attended the meeting held at Ann Arbor, Michigan, in May, of the American Anthropological Society (Central Section). He was elected First Vice-President. Dr. Henry Field, Curator of Physical Anthropology, presented a paper on "Ancient and Modern Inhabitants of Iran" before the meeting of the Anthropology Section of the American Association for the Advancement of Science, at Milwaukee, Wisconsin, on June 21. He also spent several weeks at Harvard University in special research in connection with data required for a publication on the physical anthropology of Iraq. Dr. Field also made a number of appearances on the radio and the lecture platform. Dr. Fritz Haas, Curator of Lower Invertebrates, presented a series of ten lectures under the general title "The Biologist Looks at Human Life," before the Jewish People's Institute, Chicago. Mr. Bryan Patterson, Assistant Curator of Paleontology, visited museums at

Pittsburgh, New York, Princeton, and Washington, to make studies of their collections of Paleocene mammals, this work extending from December into the early weeks of 1940. At the Carnegie Museum in Pittsburgh he read two papers at the annual meeting of the vertebrate section of the Paleontological Society of America. Mr. C. Martin Wilbur, Curator of Chinese Archaeology and Ethnology, was elected Secretary of the American Friends of China, Chicago. He conducted a seminar on "Museum Work as a Career" at Grinnell College in Iowa, and made various lecture appearances. Dr. Julian A. Steyermark, Assistant Curator of the Herbarium, was appointed representative of Field Museum to the Conservation Council of Chicago, an organization devoted to the preservation of natural resources. He also lectured before various organizations. Mr. Emmet R. Blake, Assistant Curator of Birds, was honored by election to full membership in the American Ornithologists' Union. He was a frequent speaker before audiences of various kinds, and on radio programs. Mr. D. Dwight Davis, Assistant Curator of Anatomy and Osteology, presented a scientific paper before the meeting of the American Society of Mammalogists at Baton Rouge, Louisiana, on April 4. Mr. Bryant Mather, Assistant Curator of Mineralogy, presented a paper before the convention of the Rocks and Minerals Association held at Peekskill, New York, on June 17. He was elected a junior member of the American Institute of Mining and Metallurgical Engineers, and was given an honorary appointment as Associate Curator in the Department of Mineralogy, Natural History Society of Maryland, at Baltimore. Mr. Mather and Mr. Henry Herpers, Assistant Curator of Geology, in December attended the meetings at Minneapolis of the Geological Society of America, Mineralogical Society of America, Society of Economic Geologists, and other kindred organizations. Mr. Mather attended a geology conference at the Johns Hopkins University, and made several lecture appearances. Mr. Clifford C. Gregg, Director, was appointed by Mayor Edward J. Kelly of Chicago to membership on the Chicago Recreation Commission. The Director was a guest speaker before numerous organizations, and represented the Museum at various conferences of civic leaders, municipal officials, etc. Among other members of the Museum staff who were in demand as lecturers before various organizations, or on the radio, were: Mr. Karl P. Schmidt, Curator of Amphibians and Reptiles; Mr. John R. Millar, Curator of the N. W. Harris Public School Extension; Staff Taxidermist C. J. Albrecht; Dr. Wilfrid D. Hambly, Curator of African Ethnology; Staff Taxidermist John W. Moyer, and Staff Taxider-

mist W. E. Eigsti. All the lecturers on the James Nelson and Anna Louise Raymond Foundation staff were frequently called upon for lectures before special audiences outside the scope of their regular duties. Mr. Paul G. Dallwig, the Layman Lecturer, made a number of platform appearances before outside audiences, bringing to them much of the Museum information which he conveys to his regular Sunday afternoon audiences at the Museum.

In this Report it is my desire to express my thanks to the Board of Trustees for their loyal and hearty co-operation in the many projects which I have presented to them with my requests for aid and support. It is also my desire to record my sincere appreciation to the members of the staff of the Museum who have so loyally carried on their various duties during the year and during the many years preceding it. Too often these loyal workers are simply taken for granted. Many duties of profound value are performed by dependable and careful workers whose names do not appear in headlines, but on whose accomplishments the success and reputation of the Museum depend.

Continuing their services of the past several years, men and women from the Works Progress Administration have taken an active part in almost all phases of the activities of Field Museum, and have added greatly to the accomplishments of the institution. More than 262,000 hours of work were done by a force of from 125 to 219 persons. The services of perhaps 80 per cent of these workers were interrupted during the year in conformity with the Act of Congress which automatically terminated the services of any worker on WPA after eighteen continuous months of such employment. While many workers laid off under this authority have been reassigned to the project after periods varying from thirty to ninety days, several of those formerly assigned to Field Museum have found places in private employment. The purpose of the layoff after eighteen months of continuous service is defined by the sponsors of the act as a deterrent to the establishment of "careers in the WPA," and to the extent that it has been successful, it has been justified. The effect on Field Museum has been to retard the completion of certain projects, and to make administration somewhat more difficult. In spite of these handicaps, however, the value of the work done under WPA continues to be an important factor in the accomplishments of the Museum.

The number of persons to whom meals were served in the Museum Cafeteria during 1939 is 97,543. In addition, 63,311 used the rooms

provided for children and others who bring their own lunches. To many of the latter, supplementary refreshments, such as sandwiches, hot beverages, soft drinks, ice cream, etc., were furnished from a special lunch counter. Tables and benches are available in these rooms to all who wish to use them, regardless of whether or not they purchase anything from the lunch counter.

The customary thorough attention was given to proper maintenance of the Museum building, its contents, and equipment. Following is a report of the principal activities of the forces working under the direction of the General Superintendent:

For the Department of Zoology approximately 118 lineal feet of "built-in" cases and screens were constructed along the north and south walls of Hall O, which is in preparation for exhibits of fishes. The walls and ceilings of Hall M, the new hall devoted to lower invertebrates, were plastered. Doors and grilles were installed in this hall, the entire hall was decorated, and the exhibition cases were properly placed in time for opening of the hall to the public in May. Two cases in Hall 20 (Hall of Birds) were painted, trimmed and glazed for the opening of habitat groups of the rhea and red grouse. New light boxes, fitted with fluorescent light tubes, were built and installed on all cases in Hall 21 (systematic collection of birds). Construction was begun on two large "built-in" cases, one on each side of the east end of Albert W. Harris Hall (Hall 18). On the fourth floor, an area in the southeast section was partitioned and equipped to form a new office and workshop for the Bird Taxidermist. In the main taxidermy shop the large draw curtains were removed, and replaced with new materials and draw cords. On the third floor, a wire partition was built across Room 78, and a plaster board partition was constructed in Room 99. For the Division of Birds a small cabinet was constructed for storage of eggs; nine new steel storage cases were installed; and eighty pairs of side racks and twenty-one diaphragms were fitted into storage cases previously installed. In the bird and mammal storage cases, 1,600 full-size, and 600 half-size wooden trays were fitted. At the end of the year work was well under way on remodeling Room 87 (formerly the bird taxidermy shop) to provide larger quarters for the Division of Reptiles.

Seven large mural paintings were starched and hung in Hall 25 of the Department of Botany. The case for the Illinois wild flower group in the Hall of Plant Life (Hall 29) was trimmed and glazed.

In the Department of Geology two cases, four feet wide, were altered to match other cases in Ernest R. Graham Hall (Hall 38).

and four new cases were constructed for use in the same hall. Two smaller cases formerly used in Hall 38 were refitted to replace certain cases in Frederick J. V. Skiff Hall (Hall 37). On the third floor a new office was provided for the Assistant Curator of Paleontology by reconstruction of part of an area formerly occupied by the storage room of the N. W. Harris Public School Extension. Two offices, for the Assistant Curator of Mineralogy and the Assistant Curator of Geology, were decorated and equipped. A large map case was made for the filing of maps, and various other tasks were performed in exhibition halls and offices of this Department.

Among services performed for the Department of Anthropology was the completion of six wall cases for the exhibition of archaeological material from Kish, in Hall K. An additional plaster arch was installed in the soffit of the entrance to Hall K from Hall L. In Joseph N. Field Hall (Hall A) a central floor case was built for an exhibit of food bowls, and four "built-in" cases (two at the north, and two at the south end) were constructed to house exhibits of very tall Melanesian ancestral figures and wooden drums carved from tree-trunks. For the office of the Curator of Chinese Archaeology and Ethnology, a large double-sided book stack was built.

The third floor storage room of the N. W. Harris Public School Extension was replaced by provision of space in the south central portion of the ground floor, and racks and work tables were built and installed in this location. The change effected more efficient handling and storing of more than 1,100 Harris cases, which are continually going out to, and returning from, some four hundred schools on the Department's motor trucks. Eight small carrying cases were made for a new type of exhibit being sent out by the Harris Extension, and numerous other tasks were performed for this Department.

In the Library six mahogany cases were built for the filing of maps, and a special mahogany case was constructed to provide safe-keeping for the Museum's collection of extremely rare books which could not receive adequate care in the general book stacks.

Space on the third floor formerly occupied by the Harris Extension was divided into five rooms which were assigned as a workroom for the Library's bookbinder, studios for the Staff Artist and Staff Illustrator, the already mentioned new office for the Assistant Curator of Paleontology, and an additional room for the use of the Department of Geology.

Dispatch and receiving counters, and storage cabinets, were built and installed in the Purchasing Agent's office. At the North

Entrance of the building two extensions were made to the counter fronts to prevent drafts in the Book Shop and behind the admission ticket and checking desk.

In the James Simpson Theatre the upholstered chairs, and all carpeting, were vacuum cleaned, and then sprayed with a new type of mothproofing solution. For the projection of motion pictures, a new motor-operated beaded screen was purchased and installed.

The upholstered furniture in the Director's office was re-covered. Filing cabinets were built for use in three of the general offices. A sketch box was made for the Staff Artist.

The large outdoor sign boards displayed on the Museum grounds were repaired, repainted, and reset. The admission signs used at the north and south entrances were enameled and relettered in gold leaf.

It was found necessary to replace completely the large wooden girders and heavy oak flooring of the large pit scale on the west side of the building. Another task of considerable proportions was the repair and replacement of window sashes, sills, and frames on the second, third, and fourth floors. Such work was done on 100 windows, and for the purpose tidewater cypress, which is especially resistant to decay, was used.

Many joints in the exterior marble facing of the building were cleaned and tuckpointed, and the terra-cotta cornices were repaired. The extent of this work is indicated by the fact that it continued from May to the middle of September. As only those places most urgently in need of repair were attended to, it will be necessary to resume this work in 1940 on other parts of the building. The 1940 program also calls for completion of the overhauling of the terrace wall and balustrades.

A major project undertaken was the replacement of all down-spout stacks and roof heads throughout the building. This was begun in February, and completion is scheduled for early in 1940. The pipe stacks were replaced with extra-heavy wrought-iron pipes, and the heads were especially cast of high-grade metal. The use of these materials, together with careful workmanship, gives assurance of as permanent and trouble-free an installation as it is possible to obtain.

Two new tanks were built for the trucks used in connection with scrubbing. The floors of the service corridors on the ground floor were coated with a new type of floor seal to prevent the concrete surface from flaking into dust. New wash uniforms were provided for the janitorial force.

A large amount of painting, washing, and starching of walls and ceilings throughout the building was done. Included in sections receiving this treatment were the shipping room area, freight elevator shaft, the rooms of the Staff Artist and Staff Illustrator, the Library workroom, the President's suite, the new bird taxidermy shop, the office suite of the Chief Curator of Anthropology, several other offices and workrooms, parts of nineteen exhibition halls, the east and west bridges on the second floor, the vista arches on the first floor, and the walls of the lunchroom. The floor of Room 39 was thoroughly cleaned and sealed. The wall-washing project formerly carried on by WPA workers was reduced early in the year, and abandoned August 18.

The Chief Engineer and the men working under his supervision completed much important work during the year. Some of the more important tasks are outlined in the following summary:

A large amount of electrical installation was performed. The new Harris Extension storage room on the ground floor was wired, and seventeen drop cords and two outlets for electrical tools were installed. Four fluorescent lights were installed over work benches for use in inspections of cases, and 125 feet of air pipe were installed for cleaning cases with air pressure. The room on the fourth floor, converted for use by the Bird Taxidermist, was rewired, and fluorescent lighting was installed. Sixty-five new outlets and drop cords were installed throughout the third floor to improve lighting in workrooms and offices. Two large flood lights were purchased and mounted on the north porch for night lighting. In H. N. Higginbotham Hall (Hall 31, Gems and Jewels) the lights were lowered three feet to improve illumination over the cases. Lighting fixtures on the ground floor were cleaned. Halls 21, M, and O were completely rewired, and fluorescent lights were installed in the cases. In Halls K, 16, 17, 20, 22, and 30 (Kish archaeology, North American mammal habitat groups, Asiatic mammal groups, bird habitat groups, African mammal habitat groups, and Chinese jades) the old Mazda lighting was removed and fluorescent lighting installed. One case in Hall B (North American archaeology), and one in Hall 29 (Plant Life), were also equipped with fluorescent lights. Part of Room 99 on the third floor was equipped with fluorescent lighting for use in matching colors on case accessories. Altogether, 1,021 units of fluorescent lighting were installed during the year. The old ceiling fixtures removed from Halls O and 21 were sold for salvage.

Two insecticide cabinets built by the Department of Botany were wired for automatically controlled heat. The band saw in the

same Department was moved, rewired, and an outlet was provided for a new circular saw. An electric oven was built for the Department of Zoology and wired for automatic heat.

Plumbing and heating work included the installation of a new drain pipe, and lines for hot and cold water, and for gas, from the third floor to the new bird taxidermy room on the fourth floor. A sink and gas stove were also installed in this room. The partitioning of an area formerly occupied by the Harris Extension on the third floor made necessary the installation of new drains, water lines, a sink, and two lavatories. Changes made in Room 87 necessitated installation of new drain pipes and water lines. Larger steam radiators were installed in Rooms 9, 14, 15, 16, 44, 46, and 50 to make them usable as offices and workrooms. Two new steam traps were purchased, and installed on the steam main supplying the southeast section of the building, to increase heating efficiency.

In the Department of Geology a new saw for cutting meteorites was assembled, and sixty saw blades were cut and drilled for it. A jointed bat net frame, seventeen feet long and seven feet wide, was made of brass tubing for use on an expedition of the Department of Zoology.

In the Division of Printing, new friction pulleys were purchased and installed on the job press motors. The motor on the stitching machine was overhauled, and a new motor bed was constructed for the collotype press.

All four boilers were completely relined. A new safety valve was purchased, and installed on the No. 1 boiler. The old circulating tubes in the No. 3 and No. 4 boilers were removed and replaced with new tubes. The tube caps were removed from all boilers and cleaned, and the old gaskets were replaced with new ones. Stokers were overhauled, and new grate links and bars were installed where needed. New baffles were installed in all four boilers. Soot blowers were removed, repaired, and replaced. The breeching and ash vent pipes were thoroughly cleaned. By-pass lines were installed on the No. 1 and No. 2 boilers for better control of the feed water. The feed pump on the No. 1 boiler was dismantled and new impellers installed; that on the No. 2 boiler was sent to the factory for test and change of impellers. The steam feed pump was overhauled; new impellers were installed on the No. 1 house pump; and the vacuum pumps were overhauled and repacked.

The coal conveyor was overhauled and repaired. Five new gears were installed on its shafting to replace worn-out ones. Two

new worm screws were also installed, as were new guide rails, a new chute, and several new sheets. Forty new buckets were made, and new cotter pins were placed in the roller chain.

A new furnace pipe was installed on the hot water heater.

The motor on the fire pump was overhauled, and a new relief valve was installed on the high-pressure tank to comply with a suggestion made by the insurance inspector.

A grade of coal different from that burned in the past was tested and found satisfactory. Its use thereafter resulted in a considerable saving in fuel cost.

Reports in detail of the year's activities in each of the Museum's Departments and Divisions will be found in the pages which follow:

DEPARTMENT OF ANTHROPOLOGY

EXPEDITIONS AND RESEARCH

The Field Museum Archaeological Expedition to the Southwest, again generously financed by President Stanley Field, spent four months (June to October) in a new field, transferring its activities for 1939 to New Mexico, instead of Colorado, where it had conducted excavations in previous seasons. This expedition was the most important archaeological task in the New World ever undertaken by Field Museum, and it resulted in what is probably one of the three most important excavations that have been made in the Southwest in the past twenty years.

The expedition, which was successful from every point of view, was directed by the Chief Curator of Anthropology, Dr. Paul S. Martin. He was assisted by Messrs. Joseph Weckler, John Rinaldo, and Robert Yule, Mrs. Frances Weckler, and Miss Marjorie Kelly. Mr. Weckler was the surveyor and helped direct the excavations. Mr. Rinaldo, Associate in Southwestern Archaeology on the Museum staff, again took charge of the excavated pottery and the stone and bone implements. All photographs were taken by Mr. Robert Yule, Assistant in Archaeology. Mrs. Weckler acted as secretary to the expedition and assisted in excavating burials. Miss Kelly, on the Museum staff as Associate in Southwestern Archaeology, was in charge of all skeletal materials, and assisted Mr. Rinaldo in classifying and counting the potsherds.

To elucidate and justify the statement concerning the extreme importance of this expedition's accomplishments, the following explanation is offered:

The *Basket Maker-Pueblo* complex has been fairly well worked out during the past thirty years by various archaeologists. Field Museum has contributed its share to the knowledge of this complex by its excavations in Colorado during the past ten years. Reports of these excavations are already available.

Some time after 1930 the staff of Gila Pueblo, a research institution at Globe, Arizona, first discovered that in southern Arizona and New Mexico there was a second great culture or complex which has been termed *Hohokam*. From 1934 to 1935 Gila Pueblo archaeologists conducted gigantic excavations in southern Arizona, the results of which delineated various aspects of this culture.

About 1936 the staff of Gila Pueblo undertook some excavations in western New Mexico and later submitted a report on this work. It was therein intimated that there was a third great cultural complex in the Southwest, namely, the *Mogollon*. However, the villages excavated happened to fall in a rather late period (about A.D. 800 to 900). By that time the Mogollon culture had received many traits from the Basket Maker-Pueblo horizon to the north, and some from the Hohokam culture to the west. Such sites as these are called "mixed," and are not so helpful as "pure," or unmixed, sites, in working out the details of a new culture. Many archaeologists disagreed with the conclusions set forth by the Gila Pueblo Staff because they felt that the culture described as Mogollon was merely a hybrid of the Basket Maker-Hohokam traits, or a weak, peripheral branch of the Basket Maker-Pueblo entity.

Dr. Martin, after finishing his researches in southwestern Colorado in 1938, was invited by several archaeologists who were interested in this controversy to conduct an archaeological investigation in the Mogollon country in New Mexico. After a conference in the fall of 1938 at Globe, he decided to do so. A thorough study of the sherd collections at Gila Pueblo revealed four or five promising sites in the west central part of New Mexico about 100 miles north of Silver City, and about 150 miles south of Gallup, near the small town of Reserve. These sites seemed promising because the surface pottery from them consisted of only three types—all plain types. It seemed likely that here would be found pure early phases which might possibly throw light on the Mogollon problem.

Permits for work on these sites in the Apache National Forest were obtained from the Division of Forestry of the United States Department of Agriculture. Dr. Martin and a few of his assistants devoted about ten days to building a camp of rough lumber, inas-

much as it was impossible to make other camping arrangements in the forest.

The excavations were conducted entirely at one village, which was located on a low ridge. Seven pit-houses (out of a total of forty or more) and one surface room were cleared, and many long trenches were dug. The pit-houses were scattered without order along the top of the ridge, and proved to be difficult to excavate because the ground consisted of compact glacial gravels. Each pit-house differed from the others in certain details; but in general it may be said that each was about three feet deep and fifteen feet in diameter, and each was provided with an eastern entrance-way and had one or more rather deep and large pits sunk in the floor (Plate 3). These pits were probably used for cooking purposes, although they might also have served as storage or burial pits. One pit-house was very large (thirty-seven feet in diameter). Inasmuch as post-holes were found in all houses, it is assumed that all were roofed. Burned posts were recovered from a few of these post-holes, treated with paraffin, and shipped to the tree-ring laboratory at Gila Pueblo for study and dating. In all, twenty-five burials were recovered. It sometimes required from two to four days to excavate completely a single skeleton, because of the great care it was necessary to exercise in this work. In a few instances shell bracelets and stone pipes were found associated with burials, but never pottery.

This very important skeletal material is now being repaired and restored by Miss Kelly. It is hoped from this study to learn what racial subdivision of the Mongoloid stock was responsible for the Mogollon culture.

The pottery consisted of three types: a plain, polished brown ware; a rough, unpolished brown ware; and a polished red ware. This pottery is *wholly* and *entirely unlike* any from the Basket Maker-Pueblo or Hohokam cultures. About 15,000 sherds were recovered, from which fifteen or twenty whole vessels will be recovered. This pottery is of extreme value because it probably represents some of the earliest, if not the earliest, pottery of North America.

Stone and bone tools were numerous. Two hundred stone and twenty-five bone implements were recovered. In addition there were found a number of tiny turquoise beads, a carved stone fetish, and five or six delicate shell bracelets. The shell from which these bracelets were manufactured came from the Gulf of California,

about 500 miles distant. These stone and bone implements have been very carefully studied, and many interesting details will be reported in a publication scheduled to appear in 1940. The important thing is that the preponderant majority of these stone and bone implements show *no* relationship whatsoever to any similar implements from the Basket Maker-Pueblo or Hohokam cultures. It is not possible at this time to make any very emphatic statement about these implements, but it probably will be possible to show that the stone and bone implements recovered by Field Museum are typologically related to other very much earlier horizons.

Thus it seems possible to conjecture, if not to state positively, that the Field Museum expedition discovered and excavated during its 1939 season an early pure Mogollon village. This statement is based on the fact that the stone and bone implements, and the pottery and other general features, differed entirely from any found in the Hohokam or Basket Maker-Pueblo cultures. Dr. Martin is of the opinion that what he has discovered and studied with the aid of his assistants does not constitute a hybrid culture or peripheral branch of the Basket Maker-Pueblo complex, but is a manifestation of a third pure and important cultural entity in the Southwest—the Mogollon culture.

Dr. Henry Field, Curator of Physical Anthropology, spent most of his time in 1939 in work on various publications. He completed the first part of *The Anthropology of Iraq*, and in addition continued preparation of *Physical Anthropology in the U.S.S.R.* and *Contributions to the Anthropology of Georgia, U.S.S.R.* Dr. Field also lectured and read papers before various organizations, including the American Association for the Advancement of Science, the Geographic Society of Chicago, and the Archaeological Institute of America. For the general public he lectured by radio on one of the Science Service programs over the Columbia Broadcasting System.

Dr. Wilfrid D. Hambly, Curator of African Ethnology, completed the manuscript *Craniometry of New Guinea*, which was on the press at the end of the year. Dr. Hambly also planned, supervised, and completed a detailed catalogue of osteological material. This catalogue describes all skulls and long bones, their provenance and condition. From it, a student can readily ascertain what material is available, and exactly where it is located. In addition, all African material in storage has been sorted and rearranged, and a card catalogue made for it.



PRINTING IN ANCHINA

Nine pieces of fifteenth century bronze movable type cast in Korea. The background illustrates another kind of printing—a paper size wood block in which characters are carved.

All characters are in reverse.

Bronze type presented to the Museum by Mr. Thomas L. Donnelly.

Dr. Albert B. Lewis, Curator of Melanesian Ethnology, spent the whole year supervising the sorting, cleaning, rearranging, and recording of the large storage collections in his charge. These were housed in four rooms, and were extensive enough to require the constant help of three WPA assistants. Dr. Lewis also visited Buffalo, New York, to arrange an exchange which brought to the Museum a number of rare old Melanesian specimens.

Mr. Richard A. Martin, Curator of Near Eastern Archaeology, spent all of 1939 in research and in cataloguing the hundreds of specimens from ancient Kish. These he arranged for exhibition in Hall K. In all, thirteen cases of this material have been installed this year under Curator Martin's direction.

The Curator of Chinese Archaeology and Ethnology, Mr. C. Martin Wilbur, devoted much of his time to securing Chinese archaeological collections by gift, exchange, and purchase, in order to supplement the Museum's collections from sites or culture periods heretofore inadequately represented. The most notable of his results are listed in another part of this Report. Mr. Wilbur also has been working over plans for a future hall of Japanese archaeology and ethnology. Research on Chinese slavery in the Han period in China, and the writing of a book on that subject, were brought near to completion.

During the greater part of the year, Mrs. Edna Horn Mandel, Associate, Chinese Collections, worked on a detailed catalogue of the collections of Chinese paintings, with a view to establishing more precise attributions to Ch'ing dynasty painters represented. She continued to give invaluable assistance in the study of other Chinese specimens, which must be periodically re-examined in the light of more recent archaeological knowledge. In order to improve her research technique, she spent part of her time at the University of Chicago, and Columbia University, studying history, anthropology, and the Chinese language.

Mrs. Rose Miller, a volunteer working with Mr. Wilbur, is still engaged in the arrangement and cataloguing of more than 3,000 Chinese rubbings of historical monuments, and this work, when finished, will be of great assistance.

Two volunteer associates of Dr. Henry Field's also contributed much to the Museum. Mr. Peter Gerhard prepared the complete catalogue of the map collection in the Museum. This includes 1,100 maps. He also prepared thirteen maps for inclusion in two of

Dr. Field's reports. Miss Anne Fuller assisted with the rearrangement of archaeological material in the study collection.

Reference has already been made to several publications during the year. Others which came from the press were: Volume XXIII, No. 3, *Modified Basket Maker Sites, Ackmen-Lowry Area, Southwestern Colorado, 1938*, by Dr. Paul S. Martin; Volume XX, No. 3, *Archaeology of Santa Marta, Colombia*, by Dr. J. Alden Mason; Volume 29, *Contributions to the Anthropology of Iran*, by Dr. Henry Field; and Volume 31, No. 1, *Anthropometric Observations on the Eskimos and Indians of Labrador*, by Dr. T. Dale Stewart.

On the press at the end of the year, in addition to the previously mentioned report of Dr. Hambly, was Volume 30, *The Anthropology of Iraq, Part I, The Upper Euphrates*, by Dr. Henry Field.

Thirty-six articles for *Field Museum News* complete the list of publications by the staff of the Department during 1939. Data were furnished also for thirty-two newspaper articles.

ACCESSIONS—ANTHROPOLOGY

The Department of Anthropology received forty-five accessions during 1939. These comprised 1,828 specimens, of which 350 resulted from a Museum expedition, 165 were acquired by exchange, 307 were purchased, and the remaining 1,006 were gifts. A complete list of these accessions is appended to this Report (p. 120), but several deserve special mention here.

Many of the outstanding accessions are of Chinese material. A fortunate purchase gave the Museum a remarkable lacquered and painted wooden coffin grill from Ch'angsha in Hunan province, probably dating from the fourth century B.C. A beautiful two-handled pottery jug from an early people living near the Tibetan border was also acquired. It is extremely rare - so far as is known, there is no other like it in any American museum. Other purchases and gifts include a study collection of prehistoric black pottery sherds; a few small bronzes of Shang and Chou date, mostly weapons of types heretofore lacking in the collections; and small groups of peasant embroideries, and of shadow-play figures, from western China. Mr. Thomas E. Donnelley, of Chicago, augmented the collection of Chinese printing material by a gift of some of the earliest cast bronze movable type in existence, believed to date from the middle of the fifteenth century (Plate 4).

In an exchange with the Buffalo Museum of Science some rare specimens were received for the Melanesian collection. Among them, two funerary *Tridacna* shell slabs are outstanding.

By exchange with Logan Museum, of Beloit College in Wisconsin, the Department was enabled to represent in its exhibits and study collections certain important types of Southwestern Indian pottery, of which no specimens had been available heretofore.

A very valuable addition to the Museum's European archaeological collections was a gift from Mr. Alvan T. Marston, of London, England. It includes sixteen flint implements and one molar tooth of an elephant, all of which were found in association with the Swanscombe skull at Swanscombe, Kent, England.

Mr. Thorne Donnelley, of Chicago, presented three fine drums from Haiti, which are now on display in Hall D (African Ethnology). The particular point of interest about these Haitian drums is their close resemblance to West African prototypes. They were used in Voodoo ceremonies and also in ordinary dances.

CATALOGUING, INVENTORYING, AND LABELING -ANTHROPOLOGY

Thirty-three of the forty-five new accessions were entered, as were portions of two others.

Catalogue cards prepared during the year totaled 2,477. Of these, 1,705 were entered. Since the opening of the first inventory book, the total number of catalogue cards entered is 218,995.

Distribution of catalogue cards for the current year was as follows: North American archaeology and ethnology, 371; Central and South American, and Mexican archaeology and ethnology, 6; European and British archaeology, 273; Chinese, Japanese, Tibetan, and Korean archaeology and ethnology, 107; African ethnology, 38; Madagascar ethnology, 9; Near Eastern archaeology (Iraq, Babylonia, etc.), 817; Siamese ethnology, 6; Philippine ethnology, 4; Melanesian ethnology, 174; and physical anthropology, 672.

For use in exhibition cases, 1,533 labels were supplied by the Division of Printing. These were distributed as follows: Stone Age of the Old World, 529; North American archaeology and ethnology, 462; Malayan ethnology, 24; Near Eastern archaeology, 403; Chinese archaeology, 51; ethnology of the Philippine Islands, 18; Melanesian ethnology, 41; Hall of Man, 5.

Additional photographs numbering 154 were mounted in the departmental albums. Four new albums were opened. A special

file of about 1,000 racial type photographs has also been set up under the direction of Dr. Field. Work was continued on the extensive East Asiatic photograph file.

INSTALLATIONS AND REARRANGEMENTS ANTHROPOLOGY

Hall K, which will house exhibits of material from the Near East, is rapidly nearing completion. Under the direction of Curator Richard Martin, Preparator Herbert E. Weeks installed thirteen cases, including pottery, tools, jewelry, etc., from Kish. Notable among the new cases completed is one containing a scale model of a Kish chariot, complete with horses, driver, warrior, and weapons. The horses and men were modeled by Mr. Frank Gino, WPA assistant. The chariot, its fittings, and the weapons of the men, were made by Mr. Tokumatsu Ito, Ceramic Restorer on the Department staff.

One of the new cases (No. 38) installed in Hall 32, is worthy of particular notice. In it are life-size models of a Chinese boy and girl, dressed in their school clothes, and surrounded by their school materials, toys, etc. The contents of this interesting case were secured through the assistance of Mrs. Elizabeth S. Stelle, of Tung-hsien, near Peking.

In Hall 7 a new type of archaeological exhibit has been attempted. It is called "The Story of Southwestern Pottery," and shows, by means of a table in genealogical style, the evolution of Southwestern Indian pottery. This was planned and prepared under the supervision of Chief Curator Paul S. Martin.

A new case, finished in wood veneer in order to show porcelain to better advantage, has been installed in George T. and Frances Gaylord Smith Hall (Archaeology of China). It contains white porcelain presented by the late Mrs. George T. (Frances Gaylord) Smith. An added feature is the installation of lights which are controlled by the spectator, so that he may examine patterns underneath the glaze, which can be seen only by directed light.

Another interesting installation, in Hall D (African Ethnology), consists of ceremonial masks, many of which are rare. A new case of Solomon Island material was installed in Joseph N. Field Hall (Hall A), as well as several miscellaneous exhibits.

A total of 271 miscellaneous specimens were restored during the year. The inside of the glass in exhibition cases in all halls was thoroughly cleaned, and specimens were adjusted where necessary. With the assistance of WPA workers, the huge storage collections

were cleaned and rearranged. A skilled plaster worker repaired and reconstructed pottery from Melanesia and the southwestern United States, in addition to reconstructing the foundation for, and painting and installing, the Kish chariot group.

Many photographs were expertly prepared for Chief Curator Martin's report on the 1938 Southwest expedition, and many more were made during the 1939 expedition. Preparation was begun also on maps and ground plans for inclusion in the 1939 report.

Two volunteer associates have given invaluable help in Southwestern archaeology. Mr. John Rinaldo and Miss Marjorie Kelly, of the University of Chicago, continued their work on the material excavated by Dr. Martin in 1938. Both then joined the 1939 expedition as volunteers in the field. Since their return, they have been engaged in restoration and research upon the 1939 material.

The subject-geographical index of all the specimens in the Department is well under way. The largest section, that of North America, is finished in regard to the actual indexing, and its final typed form is approximately half complete. Already there have been many opportunities to prove its efficiency, even in its present incomplete state.

All labels in exhibition cases have been checked for correctness, and the locations of all specimens in the storerooms so far worked over have been entered in the inventory books.

A technical and editorial assistant worked most of the year on the extensive collections of Southwestern Indian pottery. These specimens have never been studied in the light of modern nomenclature and classification, and when this task has been completed, the results will be published.

DEPARTMENT OF BOTANY

EXPEDITIONS AND RESEARCH

With funds supplied by Mr. Sewell L. Avery, a Trustee of the Museum, an expedition was conducted in Guatemala to gather material for a flora of that country now in preparation by Curator Paul C. Standley and Assistant Curator Julian A. Steyermark. The exploration was undertaken by Mr. Standley, who sailed from New Orleans November 16, 1938, arriving at Puerto Barrios on the north coast of Guatemala a few days later. He spent six months in the country, and returned to Chicago about the middle of May, 1939.

During these months more than 30,000 herbarium specimens were obtained, representing 15,000 separate collections of plants.

The present progressive government of Guatemala has constructed excellent automobile roads that reach almost every part of the country, except the large and sparsely populated Department of Petén. These roads greatly facilitate exploration, and Mr. Standley was able to visit and collect in twenty-two of the twenty-four departments of the country.

For about half the time headquarters were maintained at the ancient and picturesque city of Antigua, former capital of Guatemala which was destroyed by an earthquake more than 150 years ago. From this center collecting excursions were made in all directions, principally to various parts of the highlands, at elevations ranging from 4,000 to 8,000 feet. A trip was made to the Oriente or eastern Guatemala, toward the Salvador border, and shorter trips made possible an acquaintance with the flora of the Pacific coast. Although long ago accessible to visitors, this part of Guatemala had been neglected by botanical collectors, but was found to have a highly varied flora, notable for extensive forests of pine and oak, and a great variety of showy-flowered plants of many families. Perhaps no other region exhibits such a display of wild dahlias, scarcely inferior to ordinary cultivated ones, as well as wild marigolds (*Tagetes*), zinnias, and other plants with brilliantly colored flowers.

A month was spent near Quezaltenango, at an altitude of almost 8,000 feet—a cold region, devoted to cultivation of wheat and maize, with miles of hedges of *maguay* or century plants that recall similar landscapes of central Mexico. From Quezaltenango trips were made to the bleak northern mountains of Huehuetenango, whose flora is typically Mexican, and to the rich rain forests of the Pacific *bocacosta* (the middle slopes of the mountains facing the Pacific), where much high-grade coffee is grown. Other excursions extended through the peculiar mountains of the Department of San Marcos, which are covered with white volcanic sand that appears at a distance like newly fallen snow. These mountains are dominated by pine, oak, and alder forest, and the unfolding, brilliant green leaves of the alders in March give the landscape an appearance far from tropical. At high elevations there are dense forests of tall cypress and fir.

From Quezaltenango, Mr. Standley ascended one day with an Indian guide the Volcano of Santa María, one of the highest and most famous volcanoes of Central America (almost 14,000 feet), which, at least at this dry season, afforded a rather disappointing flora, except for the handsome groves of pyramidal and columnar



ILLINOIS WOODLAND SCENE
A new group in the Hall of Plant Life (Hall 29). This exhibit represents a locality in Cook County just beyond the forest preserves at the moment of the maximum development of the characteristic spring flora

cypress (*Cupressus Benthamii*). He had collected previously on the middle and upper slopes of some of the central volcanoes—Pacaya, Agua, Fuego, and Acatenango.

After leaving the Occidente, another month was passed about Cobán, center of the coffee region of Alta Verapaz. This area, long celebrated for its varied flora, is noteworthy for its great forests of pine and sweet gum (*Liquidambar*), and for its many orchids. One of these, the *monja blanca* or white nun (an albino form of *Lycaste Skinneri*), is the national flower of Guatemala.

Later, small collections were made in the vicinity of Zacapa and Chiquimula, a semi-desert area with many treelike cacti. Several weeks were spent finally on the north coast, the principal banana-producing region, where there is abundant rain forest, and a great variety of trees and shrubs. One of the most famous trees of the coast is the Guatemalan cow tree, *Couma guatemalensis*, first discovered here by Mr. Standley some seventeen years earlier.

The results of this expedition were more satisfactory than had been anticipated, chiefly because of convenient transportation, and the co-operation freely extended by several persons and organizations. Dr. J. R. Johnston, Director of the National School of Agriculture of Chimaltenango, was particularly helpful, and accompanied Mr. Standley to several regions of exceptional interest, including a tour of the northern and western departments, through the valley of the Río Blanco, the fir forests of Totonicapán, and many other localities. Don Mariano Pacheco Herrarte, of the Department of Agriculture, extended much practical assistance in the course of the expedition. Professor Ulises Rojas, of Guatemala City, was an efficient guide to various portions of the Occidente, especially the attractive region of Finca Pireneos, below Santa María de Jesús, in the Department of Quezaltenango. Mr. and Mrs. B. B. Lewis, of Guatemala City, were generous in hospitality and assistance, as were also Mr. and Mrs. L. Lind Petersen, of Finca Zapote, in the *bocacosta* west of Escuintla. Last and not least, acknowledgments are due to the United Fruit Company, especially to Mr. George B. Austin of Puerto Barrios, and to Dr. Wilson Popenoe, proprietor of a well-known historic house in Antigua.

The botanical exploration in Guatemala is being continued into 1940 with funds supplied by President Stanley Field. Assistant Curator Julian A. Steyermark left Chicago late in September and proceeded by way of New Orleans to Puerto Barrios. During the three months already passed in the field, he has devoted his atten-

tion to the Oriente or eastern Guatemala, an area visited casually by Mr. Standley. Dr. Steyermark worked for some time from Zacapa, visiting the Sierra de las Minas and other localities with abundant vegetation. He then botanized near Chiquimula, Concepción de las Minas, Jutiapa, and other towns of the Oriente. He has attempted particularly to obtain collections during the wet season, since the vegetation withers quickly after the summer rains cease.

Dr. Steyermark already has assembled a large series of specimens, and plans to spend several months more in the field, especially in the rain forests of western Guatemala, which still are little known to science. The ample material from these two expeditions, with a large amount previously existing in the Museum Herbarium, affords much data for a descriptive flora of Guatemala.

During the summer of 1939 Dr. Steyermark made several brief trips to Missouri, to continue his studies of the vegetation of that state, in which he has been interested for many years. Special attention was devoted to spring plants of Missouri, about which he has prepared a paper for publication. These visits resulted in the collecting of a large quantity of herbarium material, for addition to the Museum's permanent study series. He obtained a number of new records for the Missouri flora, and particularly for his *Spring Flora of Missouri*. During the year he completed and submitted for publication this important work, upon which he has been engaged for several years.

The *Spring Flora of Missouri* is a descriptive account, with keys for determination, of all flowering plants known to bloom in Missouri before June 1. It is to be issued jointly by the Missouri Botanical Garden and Field Museum. The description of each species is accompanied by an original illustration, prepared under Dr. Steyermark's direction at Field Museum by artists supplied by the Works Progress Administration.

Dr. Francis Drouet, Curator of Cryptogamic Botany, accompanied by Mr. Donald Richards, of the University of Chicago, left in October on an expedition financed with funds furnished by President Stanley Field. The object was the collection of algae and other lower plants for the Cryptogamic Herbarium. The first collecting centered about Las Vegas, New Mexico, and the work was continued in the vicinity of Tucson, Arizona. The last six weeks of the year were devoted to intensive collecting in various parts of Sonora. Several weeks were spent about Hermosillo, capital of that Mexican state, with excursions into the mountains and to the

Gulf of California. Exploration was conducted as far south as Guaymas, Sonora, and along various routes from there into the mountains. Great success was reported, especially in respect to the collecting of algae and mosses. A large series of flowering plants was also assembled. The party returned to the United States at the end of the year.

Mr. Llewelyn Williams, Curator of Economic Botany, who was given leave of absence in 1938 to enter the service of the government of Venezuela, was expected to return to Field Museum early in 1940, but his furlough has been extended to permit further exploration. He is acting as aid to Professor Henry Pittier, veteran botanist of tropical America, in botanical exploration of Venezuela. During 1939 he engaged in an expedition to the Río Caura, a little-known area, where he obtained a large and important series of plant material, consisting of herbarium specimens and wood samples. Data obtained there will supply important information regarding botanical features of this neglected portion of the Venezuelan Guiana.

Mr. J. Francis Macbride, Associate Curator of the Herbarium, returned in December from Europe, where he has been engaged since late in the summer of 1929 in photographing type specimens of tropical American plants. Thus is concluded a Museum project covering more than ten years. Begun in 1929 with funds supplied for three years by the Rockefeller Foundation, the project was thereafter continued at the expense of the Museum until the end of 1939. During this time there have been photographed more than 40,000 type and other historic specimens, representing almost as many species of plants, chiefly South American. During 1939 the Museum received 4,021 negatives made at the Muséum National d'Histoire Naturelle in Paris.

The vast number of types photographed by Mr. Macbride covers the greater part of the plant species described from South America, and they give to Field Museum probably a better and more authentic representation of South American species than exists in any other institution. A great number of the photographs are accompanied by fragments or complete specimens, which greatly enhance their value for study purposes.

Begun in 1939 at the Berlin Herbarium, the photographic work was continued at Munich, Copenhagen, Geneva, Madrid, Vienna, and Paris. In view of the present precarious condition of these historic collections, due to perils incidental to the European war, the importance of such type photographs can scarcely be exaggerated.

If, as is quite possible, some of these historic collections should be destroyed, the accuracy of systematic classification or identification of plant species would be imperiled, and only these photographs, with the fragments or specimens that accompany them, would be available for future students of American plants.

The assembling of this extensive series of historic photographs and specimens is without question the most important project in systematic botany undertaken in America. Its value is recognized by all botanists who have accurate knowledge of it. The photographs seem to be most highly esteemed by the enterprising botanists of Argentina and Colombia, whose difficulties regarding types are similar to those of North American botanists. Many requests are received for them, and during the past year 11,796 such prints were supplied to botanists of North and South America at cost, or in exchange for similar type photographs or for specimens desired by Field Museum.

During 1939 an exceptionally large number of plant collections has been received for study by the Herbarium staff, principally from Mexico and Central and South America. So extensive was this material that at the end of the year a large quantity of it was still awaiting study. Care of the Herbarium and handling of currently received collections were greatly facilitated by the employment throughout 1939 of a large number of clerks, typists, and mounters supplied by the Works Progress Administration of the federal government.

There have been mounted and distributed into the Herbarium 52,271 sheets of specimens and photographs. More than 2,130 typewritten descriptions of plant species, prepared in the Department or received in exchange, also have been added. These descriptions, when available in the study series, obviate consultation of the library and greatly facilitate determination and study of new or old material. These figures are in excess of those for 1938, and are a gratifying evidence of the rapid growth of the Herbarium and its increase in permanent scientific value. The total number of specimens in the Herbarium at the end of the year was 991,843. The collection is exceptionally rich in its representation of plants of tropical America, especially those of Mexico and Central America, Venezuela, Brazil, and Peru.

Work of mounting current collections has been kept well up to date, and at the end of 1939 only a relatively small quantity of material awaited preparation. Distribution into the Herbarium



kept pace with the mounting, thus making important new collections immediately available for use. Some progress was made in cleaning and repairing sheets already in the study series in the herbarium of flowering plants. Many hundreds of new covers for genera and species were prepared, and the alphabetical and geographic filing was checked and corrected in many groups.

The Curator of Cryptogamic Botany, Dr. Francis Drouet, has been occupied with varied research during the year. With Mr. William A. Daily he completed a revision of the planktonic freshwater species of *Microcystis*. A report on this work, based upon collections in Field Museum and certain large herbaria of Europe and North America, was published by the Museum in December. Work upon a treatment of the filamentous Myxophyceae in the herbarium accumulated by Francis Wille was also completed and published. A list of the Myxophyceae of Maryland by the Curator was published early in the year. Much time has been occupied with the preparation of a myxophycean flora of Jamaica, a revision of the North American species of *Plectonema*, and a treatment of the filamentous Myxophyceae of northeastern North America. Work on the first two papers is expected to be completed early in 1940. In preparation for them, the Curator visited the New York Botanical Garden in January, and Albion College, the University of Michigan, and Wayne University in February.

Field work was carried on in Indiana and Illinois on several occasions by Dr. Drouet in company with Mr. Donald Richards, Dr. G. T. Velasquez, and others.

A major project completed during 1939 was the renovation of the packaging and mounting of specimens in the algal collection. With the exception of the larger marine algae, the specimens are now filed in paper packets, each mounted upon a single herbarium sheet. It is hoped that this arrangement will give impetus to monographic work among these plants. A very material beginning was made toward a similar renovation of the collection of mosses by Mr. Donald Richards of the Hull Botanical Laboratory, University of Chicago. In the mounting of specimens in the cryptogamic herbarium, much credit is due the workers supplied by the Works Progress Administration.

Four parts of the Botanical Series were issued during the year, the most voluminous being the sixth and final part of Volume XVII, consisting of two papers by Dr. E. E. Sherff, Research Associate in

Systematic Botany. These papers are entitled *Hawaiian Euphorbiaceae* and *Labiatae and Compositae*.

Of Volume 20, three parts were printed, all devoted to algae: No. 1, *The Myxophyceae of Maryland*, and No. 2, *Francis Wolle's Filamentous Myxophyceae*, both by Curator Francis Drouet; and No. 3, *The Planktonic Freshwater Species of Microcystis*, by Dr. Drouet and Mr. William A. Daily.

Two botanical leaflets were published, both written by Miss Sophia Prior. They are No. 23, an account of *Carnivorous Plants and "the Man-eating Tree,"* and No. 24, issued just before the Christmas holiday season, entitled *Mistletoe and Holly*.

A few abstracts and reviews of current literature were prepared by members of the Department staff for the periodical *Tropical Woods*, edited at Yale University by Professor Samuel J. Record, Research Associate in Wood Technology at Field Museum.

The staff contributed numerous signed articles and brief notes to *Field Museum News*, and supplied information for newspaper articles. Curator Standley and Assistant Curator Steyermark published during the year a number of short papers dealing with plants of the United States and tropical America. Several other manuscripts by members of the Department staff, based on studies of the Museum collections, have been prepared for publication or are nearing completion.

During the year more than 19,600 specimens of plants were submitted to the Department for study and determination. These were principally from Mexico, Central and South America, and the United States. Most of this material was retained at the Museum, and only a small part had to be returned to the senders. Numerous local specimens that were not retained for the Herbarium were brought to the Museum for naming by residents of the Chicago region, particularly students and teachers. Hundreds of inquiries were answered by letter, telephone, and interview, regarding the most varied aspects of botanical science.

Throughout the year the Herbarium was consulted by visiting botanists from near and remote parts of the United States, and from several foreign countries. Much use has been made of it by scientists and students from the educational institutions in or near Chicago, or elsewhere in Illinois or neighboring states. It is the only large herbarium within a radius of several hundred miles, and this region possesses numerous educational centers at which work in systematic botany is carried on. Some of the visitors who came to study crypto-

gams remained for several weeks. The collections, of course, were used constantly by the Department staff, for work in determination and as the basis of original studies.

ACCESSIONS—BOTANY

In 1939 there were received in the Department of Botany 380 accessions, comprising 88,514 items. The total number of accessions received was approximately the same as in 1938, but the number of specimens included in them was seventy-five per cent greater. The accessions included material for the exhibits, the Herbarium, and the wood and economic collections. Classified by sources, 18,635 came as gifts, 20,842 in exchange, 4,974 were purchased, 37,568 were obtained by Museum expeditions, 4,021 were negatives of type specimens made in Europe by Associate Curator J. Francis Macbride, and 2,474 were photographic prints transferred from the Museum's Division of Photography.

Of the total receipts, items for the Herbarium amounted to more than 87,000, including plant specimens, photographs, typed descriptions, and type negatives. The largest accession of the year consisted of approximately 30,000 specimens collected in Guatemala by Curator Standley, as described upon a preceding page. Among other material gathered by members of the Department staff were 5,107 specimens from Missouri, obtained by Assistant Curator Steyermark, and 1,730 Venezuelan plants collected by Curator Llewelyn Williams.

The largest of the exchanges received during the year consisted of 7,050 specimens forwarded from Paris by the Muséum National d'Histoire Naturelle, through the Director (Phanérogamie), Dr. Henri Humbert. This collection consists chiefly of historic material from tropical America, and supplements the series of type photographs made in the Paris Herbarium by Associate Curator Macbride. A collection of similar nature consisting of 2,700 specimens was transmitted by the Conservatoire et Jardin Botaniques, Geneva, through the Director, Dr. B. P. G. Hochreutiner. Both of these sendings continue the liberal contributions made by these institutions in former years.

Other important exchanges received during 1939 include 1,446 sheets of Chinese plants, from the Arnold Arboretum, Jamaica Plain, Massachusetts; 188 specimens of California plants, from the California Academy of Sciences, San Francisco; 430 Pennsylvania plants from the Carnegie Museum, Pittsburgh; 330 plants of North and

South America, from the Catholic University, Washington, D.C.; 643 Panama plants from the Missouri Botanical Garden, St. Louis; 162 South American specimens from the Museo Argentino de Ciencias Naturales, Buenos Aires; 301 Uruguayan plants from the Museo de Historia Natural, Montevideo; 1,157 South American specimens from the New York Botanical Garden; 1,185 specimens and typed descriptions from the United States National Museum, Washington, D.C.; and 765 specimens of Mexican and Central American plants, from the Herbarium of the University of Michigan, Ann Arbor.

Gifts of phanerogamic material consisted of 16,478 items, and included much of the most valuable material that reached the Herbarium during the year. Outstanding among them was a series of 1,772 specimens of Brazilian plants, collected by Professor Mello Barreto and presented by the Jardim Botânico of Belo Horizonte. Other South American collections received by gift included 204 Colombian plants from Brother Apolinar-María, Bogotá; 80 Colombian specimens from Brother H. Daniel, Medellín; 973 Venezuelan plants from the Dirección Técnica of the Ministerio de Agricultura y Cría, Caracas, transmitted by Professor Henry Pittier; 229 Peruvian plants from Professor J. Soukup, Puno; and 95 Peruvian specimens from Dr. César Vargas G., Cuzco.

An unusually large amount of Central American material was received during 1939. Among gifts may be mentioned 767 Guatemalan plants presented by the collector, Don José Ignacio Aguilar G., Guatemala; 150 specimens from Mexico and Central America, from Mrs. George Artamonoff, Chicago; 135 Panama plants from Miss Marjorie Brown, Bennington, Vermont; 130 Costa Rican specimens from the Centro Nacional de Agricultura, San Pedro Montes de Oca; 135 Costa Rican plants from Professor Winslow R. Hatch, Hanover, New Hampshire; 192 Costa Rican plants from the Museo Nacional, San José, through the Director, Professor Juvenal Valerio Rodríguez; and 255 Guatemalan plants collected and presented by Professor Carl L. Wilson, Hanover, New Hampshire.

Among gifts of plants collected in other areas are 2,145 specimens from the Department of Botany of the University of Chicago; 711 specimens and photographic negatives, principally of Hawaiian plants, from Dr. Earl E. Sherff, Chicago; 191 Mexican plants from Mr. Richard A. Schneider, Kankakee, Illinois; 1,102 specimens of United States plants, many of them collected long ago in the Chicago region, presented by Mr. Gordon Pearsall, River Forest, Illinois;

600 Mexican plants from Mr. Harde LeSueur, Austin, Texas; 620 Mexican plants from Professor Leslie A. Kenoyer, Kalamazoo, Michigan; 350 Illinois plants, from the Illinois State Museum, Springfield; 628 sheets of Arkansas plants from the Agricultural and Mechanical College, Monticello, Arkansas; 269 United States plants from Mr. Hermann C. Benke, of Chicago, in continuation of his former extensive donations of herbarium material; 161 Philippine plants, from the Botanical Museum of Harvard University, Cambridge; 165 plants of Texas and Mexico, from Mr. George L. Fisher, Houston, Texas; 1,650 plants of the western United States, from Dr. Herbert M. Evans, Berkeley, California; and 658 specimens of Mexican plants, collected by Mr. Virginus H. Chase and presented by Mr. Harry Hoogstraal, Chicago.

For the Cryptogamic Herbarium, 5,643 specimens were accessioned in 1939. Of these 2,016 were received as gifts or through collecting by members of the staff; 1,448 were received in exchanges with other institutions and individuals; and 2,179 were received by purchase.

Among the more important gifts received are 305 marine algae of North America and Italy collected by Professor I. F. Lewis, University of Virginia; 256 miscellaneous cryptogams from the Estate of Abigail Butler; 257 algae of the southern Appalachian Mountains, from Professor Harold C. Bold, of Vanderbilt University and Barnard College; 138 algae of the north central states from Mr. William A. Daily, of the University of Cincinnati; 172 cryptogams from the herbarium of Paul Blatchford, chiefly from Illinois and New England, received from Mr. Gordon Pearsall, of Chicago; 105 cryptogams of Missouri, from Mrs. Cora Shoop Steyermark, Chicago; 52 algae from Mr. Preston Smith, of Oberlin College; and 45 specimens of algae from Dr. G. T. Velasquez, of the University of the Philippines.

The collections made by members of the Museum staff consist principally of 205 cryptogams of Illinois and Indiana obtained by Curator Francis Drouel in company with others; 87 algae collected by Mr. John R. Millar, on the Sewell L. Avery Expedition to Nova Scotia, 1938; and 58 cryptogams collected in Missouri by Dr. Julian A. Steyermark. In addition, a thousand or more cryptogams collected by Mr. Paul C. Standley were received as a result of the Sewell L. Avery Expedition to Guatemala, 1938-39.

The chief lots of specimens received in exchange are 575 cryptogams of California and the South Pacific islands from Dr. F. R.

Fosberg, formerly of the University of Pennsylvania; 257 algae of the Philippines from the Departments of Botany of the University of Michigan and the University of the Philippines; 202 miscellaneous algae from the Naturhistoriska Riksmuseet, Stockholm; 184 Myxophyceae from Mr. J. C. Strickland, of the University of Virginia; 72 miscellaneous algae from the New York Botanical Garden; and 54 algae of Massachusetts from Miss Alma Rutledge, Baltimore.

Purchases included Erbario Crittogamico Italiano, Series II, 11 fascicles (850 specimens); Farlow, Anderson and Eaton, *Algae Americae Borealis Exsiccatae*, 229 specimens; *Hepaticae Selectae et Criticae*, Series 11 (50 specimens); *Musci Selecti et Critici*, Series 6 (50 specimens); and Rabenhorst, *Algen Europas*, 1,000 specimens.

All of the specimens thus received have been filed in the Cryptogamic Herbarium.

The herbarium of Francis Wolle, consisting of more than 2,000 specimens of cryptogams, mostly algae, was deposited on loan in the Museum's Cryptogamic Herbarium by Mr. Philip W. Wolle, of Princess Anne, Maryland, in January, 1939. Along with many specimens collected by the Rev. Mr. F. Wolle himself, the collection contains most of the material received by the Rev. Mr. Wolle in exchanges with European and American botanists. The first twenty-one volumes of Wittrock and Nordstedt, *Algae Aquae Dulcis Exsiccatae*, are included. The greater portion of the herbarium has now been mounted and placed on file in the general collection.

Of specimens received for the exhibits the most notable was a splendid plank, two feet wide, of the west coast mahogany of southern Mexico and Central America (*Swietenia humilis*). This was received as a gift from Mr. L. Lind Petersen, Escuintla, Guatemala.

To Mr. Edwin C. Guest, of the Rubber Institute, Kuala Lumpur, Federated Malay States, the Department of Botany is indebted for a fruiting branch of durian, and for fresh nipa palm seeds for growing.

Garfield Park Conservatory, through its Chief Horticulturist, Mr. August Koch, has as usual co-operated with the Department of Botany in many ways, by furnishing specimens of plants for preservation in the Herbarium and for use in the exhibits, and by growing plants for study or exhibition from seeds received from collectors abroad. The old Oriental lotus seeds germinated in the Museum in 1938 were thus grown in Garfield Park and brought into flower during the past summer. In the same manner, many palms in Garfield Park Conservatory have been grown from seeds collected on Field Museum expeditions. In the absence of greenhouse facilities

in the Museum's Department of Botany, the co-operation afforded through the courtesy of Mr. Koch has been particularly valuable.

Important loans were received, from the United States Department of Agriculture, of photographs of American forest types made by the Forest Service, and of a microfilm of the botany catalogue of the Department of Agriculture Library, from which its extensive subject catalogue may be duplicated here.

CATALOGUING, INVENTORYING, AND LABELING—BOTANY

During 1939 there were distributed in exchange to institutions and individuals in North and South America, and Europe, 70 lots of material, amounting to 8,666 items, including herbarium specimens, wood specimens, photographs, and typed descriptions of plants. One item sent was a botanical index, consisting of about 100,000 separate cards. Sixty-six lots of material, comprising almost 8,000 separate items, were received on loan for study or determination, and 85 lots, including 11,627 specimens, were lent for determination or for use in monographic studies.

Records of botanical accessions, loans, and exchanges have been kept by Miss Edith M. Vincent, Librarian of the Department. Geographical and collectors' indexes of material in the study series have been kept up to date, as has also the card catalogue of the economic collections (including a new systematic index of the study collection of woods), with the aid of workers from the Works Progress Administration. Many of these workers gave a large amount of assistance in arrangement and reorganization of reference and exchange material, herbarium and economic specimens, and woods. They wrote more than 165,700 catalogue cards for permanent and temporary files, besides many thousands of herbarium and wood collection labels.

Labels have been prepared, printed, and installed for all current additions to the exhibits, and many old ones have been revised. The last of the few remaining black exhibition labels have finally been eliminated.

INSTALLATIONS AND REARRANGEMENTS—BOTANY

In the Hall of Food Plants (Hall 25) the series of murals begun last year was carried forward during the year by Mr. Julius Moessel, and is approaching completion. These murals all have reference to the subject matter of the exhibits which they supplement. They consist of a series of scenes portraying the principal

human activities growing out of man's quest of vegetable food, viz., the gathering, cultivation, and harvesting of food plants, and the preparation and distribution of their products. The series begins with scenes of simple food-gathering and a primitive type of planting, followed by hoe-cultivation, rice-growing under irrigation, plowing and broadcast sowing of grain, threshing and milling, sugar and edible oil production, transportation and trade in exotic products, water-borne commerce with foreign countries, a tropical market scene, and a present day wholesale vegetable market.

In general, the murals parallel the arrangement of the exhibits in the hall. The scenes showing planting and preparation of the soil for crops represent various types of cultivation of food plants in different parts of the world.

Some form of cultivation of grain having been the basis of civilization everywhere, several murals are devoted to this important subject. Sugar production is portrayed in a scene showing a colonial sugar plantation in Brazil where sugar cane was first grown on the American continent. The one picture showing vegetable oils is based on the recent discovery of ancient remains of a primitive type of olive oil press on the north coast of Africa. The spice trade is represented by a caravan scene from the region north of the Persian Gulf. The beginning of water-borne commerce in foreign food products is depicted in the mural showing French coffee buyers in Arabia. This was reproduced in last year's Report. A mural depicting a market scene in southern Mexico is followed by a picture of a present-day wholesale vegetable market, such as may be found in any large northern city of the United States. The series will be closed with two maps. One will show the ancient trade-routes over which contact was maintained between the East and West up to the time of the discovery of the sea routes and the resultant general interchange of cultures and products which profoundly changed the food plant situation everywhere. The second map will show the main centers of origin of food plants and of the beginnings of their cultivation.

The artist, Mr. Moessel, is a well-known mural painter of large experience and ability. The pictorial excellence of the pictures and their artistic qualities are evident to all who have seen them. They are not only highly decorative, forming an interesting and instructive feature of the hall which they embellish, but they contribute effectively to an appreciation of the exhibits to which they relate. It may be said that with the completion of this series of murals, the

food plant exhibit as a whole becomes more distinctly a unit, rather than merely a collection of classified and labeled items. The presence in the hall of a collection of palms interferes little, if at all, with the total result achieved.

The principal addition to the exhibits in the Hall of Plant Life (Hall 29) was a large diorama, or so-called background group, showing the vegetation of a characteristic Illinois woodland (Plate 5). This group, which should please all those interested in the beauties of the local flora as it still exists in the environs of the city, is placed in the northwest corner of the main botanical hall where it adjoins the alpine scene completed last year. The new group reproduces a selected spot in mixed woods at the edge of the present forest preserves, as it appears late in May when the leaves of the bass-wood are still only half expanded and those of the white oak still drooping and pink. The ground is covered with phlox, Virginia blue-bells, and blue-eyed Mary, with marigolds along the streambed, and with white and red trillium, adder's tongue, Jack-in-the-pulpit, geranium, May apple, and columbine on the rising ground to one side. It is a typical local spring flower assemblage, including the shrubs and vines common in the local woods.

The Museum is indebted to the Superintendent of the Cook County forest preserves for several tree trunks that form a part of this exhibit. The reproduction of the numerous plants in this group was carried out in the work shops and laboratories of the Department of Botany under the supervision of Mr. Emil Sella, Chief Preparator of Exhibits, aided by Mr. Milton Copulos, Artist-Preparator, and many skilled workers supplied by the Works Progress Administration. The background painting is the work of Mr. Arthur G. Rueckert, Staff Artist.

This local woodland scene is the second of six groups planned for Hall 29 to show types of plant associations characteristic of different environments. The present group, with its painted landscape setting, serves as an example of woodland vegetation of the northern temperate zone.

Other groups on the same plan, but representing very different environments with very different vegetation, are in process of preparation, and it is to be expected that some of these will be completed during the coming year.

So much work was required in the construction of this group that few other additions could be made to the exhibits in the hall. Among these few, the most recent is a durian fruit on its branch,

reproduced from a specimen sent from the Federated Malay States by Mr. Edwin Guest, who was a visitor to the Museum about two years ago. It is one of the very few such specimens for exhibition obtained from a person not directly connected with the Museum, but collected in accordance with Museum instructions. Carefully packed, it arrived in excellent condition. The durian, which has the reputation of being the most evil-smelling yet perhaps the most delicious of fruits, had long been desired for the exhibits. It was the one fruit lacking to give the Museum a rather full representation of the principal kinds of tropical fruits, and its acquisition is recorded with satisfaction.

In recent years efforts have been made to add also to the representation of the fruits of the temperate zone, and Mr. Copulos completed early in the year a handsome reproduction of a branch of Bartlett pear collected for the purpose many years ago in Michigan. Some work was done during the year also on other such exhibits for the Hall of Plant Life.

Completed for Hall 28, which is devoted to plant raw materials and products, was a branch of the Mexican rubber tree, *Castilla elastica*, with a trunk of the same, showing scars of incisions for tapping. This has been placed with the other rubber trees. The Mexican rubber tree is of interest as being the species selected for planting when rubber plantations were first established. Its latex was known in pre-Columbian days and was used by the Indians for their rubber balls.

Some progress was made on a diorama of a primitive starch-making plant for Hall 25. For Charles F. Millspaugh Hall (the Hall of North American Woods) some fifteen transparencies were colored, and frames were prepared for about twice that number.

With many new photographs of forest types available, lent by the United States Forest Service, good progress with transparencies for this hall should be made during 1940.

In the Hall of Foreign Woods (Hall 27) several new installations were made, including a case of Philippine woods, the gift in large part of the Cadwallader-Gibson Company, of Los Angeles, California; and a case of Mexican woods containing material presented by the Mexican government, the Mexico Land Transportation Company, and Mr. S. M. Le Barron, of New Orleans. An assortment of Russian woods acquired by the Museum in 1893, and exhibited when the Museum was housed in its former Jackson Park Building, was refinished and installed with new labels in Hall 27. They include

red Baltic pine, northern pine, Norway spruce, European larch, elm, linden, aspen, and hornbeam. The Japanese wood exhibits, condensed last year, were arranged in more compact order in the hall, making room for a more adequate display of Philippine and other woods, the exhibits of which need to be augmented.

DEPARTMENT OF GEOLOGY

EXPEDITIONS AND RESEARCH

An expedition to western Colorado spent nearly three months collecting fossil mammals from the upper Paleocene deposits in the Plateau Valley, De Beque area, Mesa County. Work in this region has been carried on at intervals since 1932. The expedition personnel consisted of Mr. Bryan Patterson, Assistant Curator of Paleontology, and Mr. James H. Quinn, Assistant in Paleontology, who were joined for parts of the season by Messrs. Robert G. Schmidt, Paul G. Clark, Leonard C. Bessom, and Harold E. Pearson. The party was fortunate in finding excellently preserved remains of several individuals of a new pantodont. Pantodonts were primitive hooved mammals that have left no descendants, have no close living relatives, and were the first mammalian order to evolve large animals. Two partial skeletons of *Barylambda*, the type of which was found by an earlier expedition, were excavated. Remains of medium-sized and small mammals are rarer in the Plateau Valley deposits than they are at other Paleocene localities, but more specimens of this type were secured there during this season than at any time in the past.

In addition to its activities in Paleocene deposits, the expedition collected fossil plant material from the Dakota, Hunter Canyon, and Williams Fork formations of the Cretaceous, and fossil plants and insects from the Eocene Green River formation. Two days were spent visiting old localities in the lower Eocene of the Rifle area. A number of interesting specimens were found, the most noteworthy of which were complete legs of the small four-toed horse *Hyracotherium*.

An expedition to South Dakota, under the leadership of Mr. Paul O. McGrew, Assistant in Paleontology, included as collectors Messrs. John Schmidt and Orville L. Gilpin. This party spent two and one-half months collecting fossil mammals in Pliocene stream-bed deposits near Martin, South Dakota. A large fauna was obtained which included specimens of some thirty genera. Most of these are new to the Museum collections, and several represent hitherto un-

known species. Among the most important are nearly complete composite skeletons of an extinct camel, *Procamelus*, and an ancestral horse, *Pliohippus*. In addition to these, there are specimens of an extremely rare genus of saber-tooth cat, a rhinoceros, a small extinct beaver and several other rodents, four kinds of horses, small antelopes, four different genera of dogs, and several genera of other mammals now extinct.

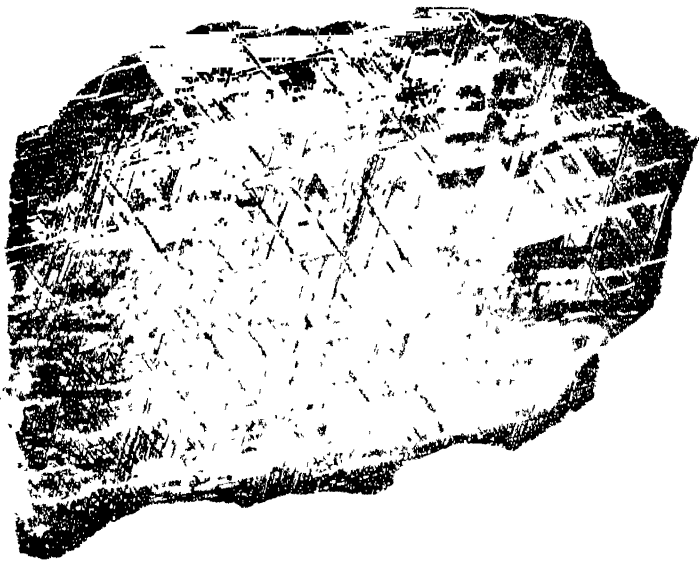
Mr. Sharat K. Roy, Curator of Geology, spent three weeks visiting the University of Iowa, Harvard University, Peabody Museum at Yale University, and the United States National Museum. The purpose of these visits was to examine certain middle and upper Ordovician type specimens, and to discuss with specialists some of the controversial problems that had arisen during the preparation of his Baffin Land monograph.

Mr. Bryant Mather, Assistant Curator of Mineralogy, during an expedition of two weeks, visited forty-seven mineral localities in the northeastern states, and collected eighty-seven mineral species, seven of which were new to the Museum collection. He also made short field trips on Saturdays and Sundays to localities within 300 miles of Chicago, and thus obtained a much greater quantity of useful material than it had been expected this region would yield.

Research and publication in the field of vertebrate paleontology were carried on as opportunity offered. Five papers were published. A joint paper by Mr. Elmer S. Riggs, Curator of Paleontology, and Assistant Curator Bryan Patterson, on *Stratigraphy of the Late Miocene and the Pliocene of the Province of Catamarca, Argentina*, was published in the journal *Physis*, of Buenos Aires. *The Skeleton of Coryphodon*, by Mr. Patterson, was published in the Proceedings of the New England Zoological Club. Four papers on vertebrate paleontology, written by members of the staff, appeared in Field Museum publications. These were: *New Pantodonta and Dinocerata from the Upper Paleocene of Western Colorado*, by Mr. Patterson; *A New Amphicyon from the Deep River Miocene and Nanodelphys, an Oligocene Didelphine*, by Mr. Paul O. McGrew, and *A Specimen of Elasmosaurus serpentinus*, by Mr. Riggs. Three other papers on vertebrate paleontology were prepared, but have not yet been published. Substantial progress was made by Assistant Curator Patterson on his memoir on large extinct South American birds, some of which are of gigantic size. An article on meteorites by Chief Curator Henry W. Nichols appeared in the *Scientific Monthly*. Numerous



La Porta Meteorite



Mapleton Meteorite

articles by members of the Department staff appeared during the year in *Field Museum News*.

Curator Roy devoted the greater part of the year to completing the monograph on the Baffin Land fossils which he collected several years ago as geologist for the Rawson-MacMillan Expedition to Labrador and Baffin Land. The paper is not quite ready for the press, but the fauna, consisting of 114 species, forty-seven of which are new, have been described, and photographs of all macrofossils have been made and captioned. The two main items remaining to be done are photographing the microfossils, chiefly ostracods, and the final revision. This monograph deals with problems of Arctic Ordovician stratigraphy.

The appointment to an assistant curatorship of Mr. Henry Herpers, who is an experienced chemist as well as a geologist, has made possible resumption of work in the chemical laboratory upon the scale its importance deserves. The laboratory has been modernized and provided with a combustion furnace, titrimetric apparatus, vacuum pump and other needed equipment. It is now in shape to meet demands upon it efficiently and economically. The accuracy of the analytical methods used has been tested against standard test material from the United States Bureau of Standards.

Renovation of the laboratory was completed late in the year, after which regular work of analysis and investigation was resumed. An iron meteorite was analyzed for use in meteorite studies for publication, and analyses of three more are under way. Three limestones and one granite were analyzed for Mr. Roy's monograph on Baffin Land. Some of the fossil bones collected on expeditions of 1939 are badly stained, and a successful method of bleaching them was developed and tried out experimentally. One of the bones was analyzed to determine whether certain proposed treatments could be safely used.

As deterioration of the painted backgrounds of many exhibits should be minimized in every possible way, Mr. Herpers made a thorough investigation of the purity and durability of pigments used by the Museum Staff Artist. Numerous partial and some complete qualitative analyses for identifications of specimens were made as usual. Nine antique bronzes were restored by the Fink process for the Department of Anthropology, 560 gallons of alcohol were purified by redistillation for the Department of Zoology, and distilled water was provided wherever it was needed. A new method of etching meteorites, developed in the United States National Mu-

seum, was tried out and has been adopted as standard practice. This method produces sharper figures and imparts brighter luster than did the method formerly in use.

Work in the vertebrate paleontology laboratories has continued along the usual lines of preparation of material for exhibition and study. Skeletons of the Pliocene horse, *Plesippus shoshonensis*, the Pleistocene bison, *Bison antiquus*, and the small water deer, *Leptomeryx evansi*, were mounted. A series of specimens showing the evolution of the camel was designed and prepared for exhibition.

Assistance, by Works Progress Administration workers under supervision of Museum staff members, in the work of preparing specimens has continued steadily. An important part of a collection received from the State Teachers' College, at Chadron, Nebraska, has been prepared. A large part of the collection of Pliocene mammals from the South Dakota expedition was also prepared under the supervision of Mr. McGrew, and the new pantodont collected by the Colorado expedition is in process of preparation. Construction work for mounting two skeletons of South American fossil birds is nearly completed. The large collection of fossil fish-lizards is being repaired, and mounts for these specimens are in course of renovation.

A diorama of the Devil's Tower, a famous volcanic neck in Wyoming, has been in preparation for most of the year by a WPA artist. Near the close of the year this work was temporarily discontinued owing to loss of the services of the artist.

Specimens frequently require sawing or polishing. Apparatus for sawing, devised by the Chief Curator, and for polishing, designed through the co-operative efforts of several members of the staff, was built in the Department workroom and is now in steady operation. As none of the staff had experience in polishing minerals, much experimentation was necessary before the present efficient equipment could be perfected. The equipment consists of a saw, a grindstone for smoothing, and a wooden wheel for polishing. The saw is a modification of the Vanderwilt saw used by the United States Geological Survey and the University of Arizona. Sawing is effected by loose abrasive automatically fed to a reciprocating blade of sheet iron. The Museum saw is enlarged from the earlier Vanderwilt design so that it can saw larger specimens, and the automatic abrasive feed and some other features are modified for smoother operation. As experience in its use was acquired, it became possible to operate it for several hours without attention. The grindstone for smoothing

follows the practice in Oberstein, Germany, where the principal industry for more than 200 years has been agate polishing. Smoothing is finished on a canvas-covered horizontal lap charged with fine abrasive. Final polishing is on a wooden wheel charged with polishing powder. The equipment has proved to be both economical and efficient. Many of the cryptocrystalline quartzes collected in the Northwest in 1938 have been polished. Slices have been cut from a number of meteorites, and excellent specimens for the physical geology exhibit in Clarence Buckingham Hall (Hall 35) have been prepared by sawing specimens that were useless in their original state.

The Museum supplied material from the Pultusk meteorite (which fell in Poland in 1868) to the Massachusetts Institute of Technology for an important research conducted by Professor Robley D. Evans to determine the age of the earth and of the universe. Preliminary results of this research have been published by Field Museum Press. Specimens of silver ores from Mexican mines were sent to the University of Chicago for the use of Professor E. S. Bastin in a research on the paragenesis of certain Mexican ores. Two meteorites were lent to Mr. Stuart Perry, a recognized authority on meteorites, to be used in conjunction with specimens from other institutions in research on certain features of an uncommon group of meteorites.

Specimens sent or brought in for identification have been more numerous than usual. While most of these can be identified at a glance, enough of them have required careful study to consume much time of the staff. The Mapleton meteorite (Plate 7), later acquired, was first recognized in material sent in for identification and ten choice minerals were added to the collection from this source.

ACCESSIONS —GEOLOGY

The Department of Geology recorded during the year ninety-six accessions, which included 3,479 specimens. Although the accessions were slightly more in number than those recorded in 1938, they included only two-thirds as many specimens. Classified by sources, 2,180 specimens came as gifts, 159 were received by exchange, 879 were from expeditions, 231 were collected by members of the staff, and 30 were purchased.

The most important gift of the year was received through the courtesy of the California-Arabian Standard Oil Company from two of their geologists, Messrs. T. F. Harris and Walter Hoag. They presented two meteorites which they collected at the almost inaccessible meteor crater at Wabar, Rub'al Khali, in the Arabian Desert.

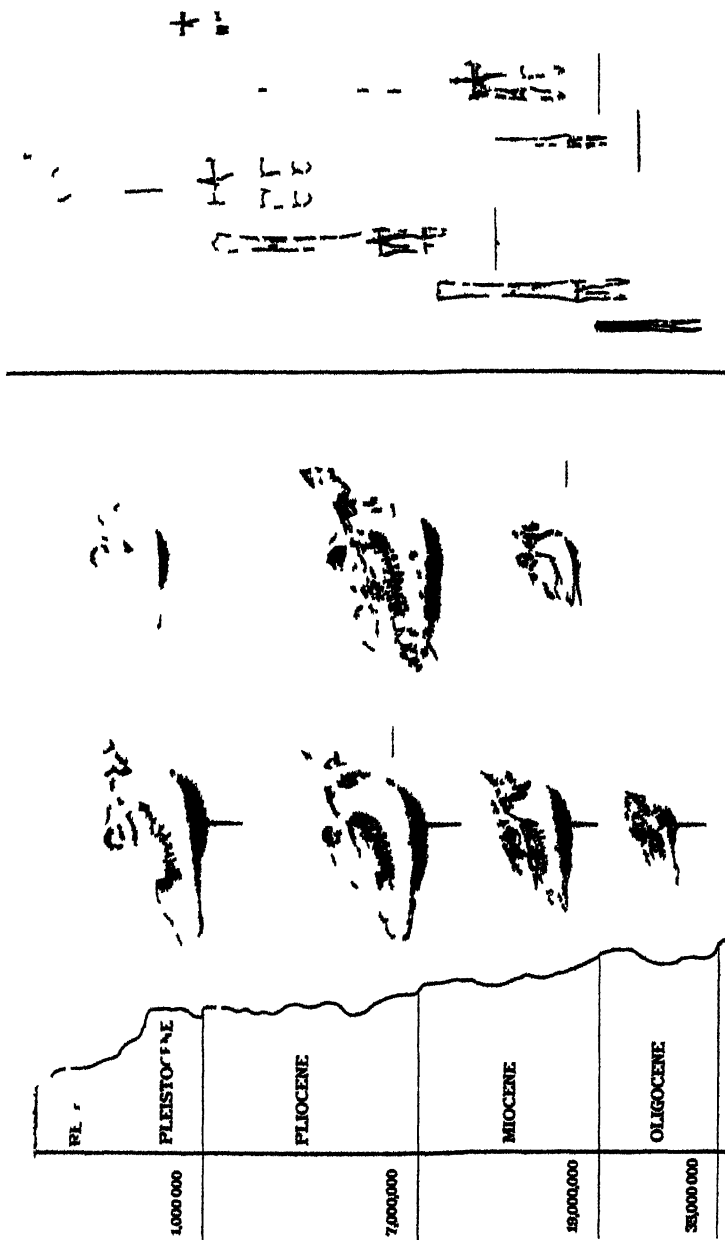
These are of exceptional interest as they are from one of the few meteorites large enough to excavate craters where they fell. The meteorite specimens were accompanied by some of the silica glass made by the melting of parts of the meteorite and surrounding rock by heat developed by the meteorite's impact with the earth. The only other specimens of the Wabar meteorite in any museum are those in the British Museum, which were collected by the explorer H. St. John Philby when he discovered Wabar in 1932.

Another interesting addition to the meteorite collection is a slice of the Tamentit meteorite, which possesses legendary as well as scientific interest. This meteorite fell near an oasis in the Sahara at the close of the fourteenth century, and is the oldest meteorite actually seen to fall which has been preserved. Nine other slices of meteorites not before represented in the collection were purchased, and a slice of the Soper (Oklahoma) meteorite was obtained by exchange with the Oklahoma Geological Survey. An iron meteorite weighing 108 pounds, recently dug up in Mapleton, Iowa, was purchased from its discoverer. Another specimen purchased from its discoverer is a newly found twenty-pound individual of the Joe Wright Mountain (Arkansas) meteorite. Thirteen of the fourteen meteorites added this year are from falls new to the collection. Two tektites from a newly found Texas locality were obtained by exchange, and fifteen others, to illustrate varieties of moldavite, were purchased.

Another important gift was a collection of nearly 1,500 minerals and fossils, presented by Dr. Henry Field, of Chicago. This collection was made before 1820 by the Misses Otteline and Diana Salisbury, of Baggrave Hall, Leicestershire, England. It includes many specimens from now "classical" localities in England and Europe—some from places whence such specimens can no longer be obtained.

Among other gifts to the mineral collection worthy of special mention were three rare minerals new to the collection. These were a saponite, from Mr. Ben Hur Wilson, of Joliet, Illinois, a serendibite, from Mr. Frank C. Hooper, of North Creek, New York, and an example of the exceedingly rare callanite which was included in a collection from Dr. M. J. Groesbeck, of Porterville, California. Dr. Groesbeck also presented a thinolite of unusual perfection. Mr. W. A. Blomstran, of Lyon Mountain, New York, presented a specimen of the rare byssolite, hitherto represented by only a single example. A chatoyant quartz from Mr. Ludwig A. Koelnau, of

EVOLUTION OF THE CAMEL.



Minneapolis, and a sardonyx from Mrs. M. J. Hubeny, of Chicago, are semi-precious stones of better than usual quality. The largest garnet in the collection is the gift of Miss Katherine S. Kniskern, of Baltimore, Maryland. Mr. Oscar U. Zerk, of Kenosha, Wisconsin, presented seven polished moss and scenery agates as an addition to the moss agate collection in the Gem Room (H. N. Higinbotham Hall). Mr. Frank Von Drasek, of Cicero, Illinois, added twenty-nine minerals to his gifts of former years.

A collection of 187 minerals, from Mr. George W. DeMuth, of Chicago, contained rare lithium minerals. Miss Bertha Gordon, of Porterville, California, presented a collection of fifteen minerals from Death Valley, accompanied by six photographs which illustrate exceptionally well the geological phenomena encountered in deserts. Valuable minerals were received from twenty-seven other donors.

Two rare minerals new to the collection—oxyhornblende and chiolite - were obtained by exchange. A chrysoberyl crystal, the largest in this country if not in the world, was also secured by exchange. Another exchange provided a group of selenite crystals of extraordinary slenderness. Some of these are nine inches long, with a ratio of length to thickness of five hundred to one. Local collecting by the Assistant Curator of Mineralogy has yielded more than 200 mineral specimens, many of excellent quality.

The most valuable additions to the vertebrate fossil collections came from the expeditions to South Dakota and Colorado, already mentioned. A collection of 120 specimens of vertebrate fossils was obtained through exchange with the State Teachers' College of Chadron, Nebraska. Other specimens acquired by exchange were the cast of a skull of *Aleurodon* from the American Museum of Natural History, New York, and a skull of *Buettnaria* from the Museum of Comparative Zoology, Cambridge, Massachusetts.

Gifts of fossils were fewer than usual. Bones of the fossil moose, *Cervalces*, presented by Mr. Charles N. Ackerman, of Antioch, Illinois, are of local interest. This beast, which once lived in the country around Chicago, had horns more like those of an elk than a moose. Another gift of local interest consisted of fossil vertebrates from Western Springs, Illinois, presented by the Park Board of that town. It contained various bones of extinct species of deer and elephant, and a complete fossil fish, which were uncovered during excavations for the improvement of the village park. Other vertebrate fossils were donated by Mr. R. E. Frison, of Tensleep, Wyoming, and Mr. John Winterbotham, of Chicago.

Except for the Salisbury collection already mentioned, there were few additions to the collection of invertebrate fossils. Members of the staff collected seventy-two fossils, one fossil leaf was purchased, and twenty-eight miscellaneous fossils were presented by six donors.

The principal additions to the physical geology collections were specimens of seventeen volcanic products from the volcanoes of Guatemala and El Salvador, presented by Mr. and Mrs. George Artamonoff, of Chicago; and a number of tufas from the shores of Mono Lake in California, the gift of Dr. M. J. Groesbeck, of Porterville, California. The Field Museum Magellanic Expedition of 1939 brought to the Department gifts of nine silver ores from Mr. E. G. Howe, of Puno, Peru, and the Compania Minera de Cailloma, of Arequipa, Peru.

CATALOGUING, INVENTORYING, AND LABELING—GEOLOGY

The Department of Geology has made a change in its manner of reporting catalogue entries. Two catalogue books temporarily in use during the first months of the Museum's existence have been dropped from the records, as they are no longer of use, and their contents are incorporated in the permanent records. This reduces the number of catalogue books in the Department from twenty-eight to twenty-six.

Hitherto each specimen catalogued has been reported as if it were a separate entry in the books, although often several duplicates are included in the same number. The 201,559 specimens reported as entries in the Report for 1938 were included in 68,826 separate entries. During 1939, 3,044 specimens were catalogued by 1,608 numbered entries, making a total of 70,434 numbered entries, cataloguing 208,167 specimens. All specimens have been catalogued except such of the vertebrate fossils collected by this year's expeditions as cannot be identified until they are removed from the matrix.

The classified card catalogues, begun three years ago, are proving of great value. The classified catalogue of minerals has been kept up to date by the addition of 924 cards. The catalogue of new mineral names in loose-leaf book form has been kept up to date by the addition of 100 entries. A new catalogue of all mineral names, begun this year by the Assistant Curator of Mineralogy, contains all mineral names in the four most important texts. Some names from other sources must be added, but even in its present form the catalogue is valuable as a saver of time. The classified catalogue of meteorites

has been kept up to date by the addition of 154 cards. This catalogue contains, on white cards, data on all meteorites in the collection, and, on red cards, data for all recorded meteorites of which the Museum has no specimens.

The classified catalogue of invertebrate fossils is still far from complete, although 2,150 cards were added during the year. Many of these await checking by a member of the staff before they are filed. The classified catalogue of the rock collection, which now contains 2,858 entries, was kept up to date by the addition of 92 cards.

The classified catalogues of vertebrate fossils have been kept up to date except for recent additions which require more preparation and study before they can be properly catalogued. The vertebrate paleontology bibliographical files are increased by 678 cards. Several hundred valuable maps and atlases have been stored for years in bundles in the Department Library. These have been unpacked, and are being classified and catalogued for filing in a new cabinet which has been provided for the purpose. Several reference files were prepared, in card form, on mineralogical subjects such as fluorescence, to facilitate revising collections and for use in research.

Copy for 800 labels was prepared for the printer, and all installed specimens have been properly labeled. A number of large descriptive labels were rewritten to conform with the advances in geological knowledge of recent years. Storage labels were written for 2,577 specimens in the study collections, and faded numbers on specimens were repainted wherever found. The classified and cross-index catalogue of photographs has been kept up to date.

INSTALLATIONS AND REARRANGEMENTS—GEOLOGY

During 1939 plans were prepared for the improvement of the appearance and educational value of the collections by a thorough revision and reinstallation.

Since the present installation of the geological collections was planned in 1919, important improvements in methods of display have been developed, and there has been a great increase in the size of the collections. Expansion of geological knowledge, too, has kept pace with the recent progress of all the sciences. Thorough revision and reinstallation of the collections will incorporate the additions to better advantage, and will materially enhance the appearance of the halls. A beginning has been made during the past few years by reinstallation of the meteorite collection in Hall 34 and the rock collection in Clarence Buckingham Hall (Hall 35). Reinstallation

of the collection pertaining to physical geology, involving complete reclassification and addition of much new material, had been under way during the previous two years, and was continued in 1939. Three cases were reinstalled, and two and one-half cases remain to be installed before this hall is completed. Installation of the remaining cases has been deferred because it is expected that better material than is now at hand will be available soon. General plans for reinstallation of the paleontological collections in Ernest R. Graham Hall (Hall 38), and the economic geology material in Hall 36 and Frederick J. V. Skiff Hall (Hall 37), have been prepared, and much of the preliminary work necessary before actual installation has been done. As there will be much transferring of specimens among these three halls, reinstallation of all three must be undertaken simultaneously.

The Curator of Paleontology prepared a comprehensive plan for the conversion of Graham Hall from a Hall of Paleontology to a Hall of Vertebrate Paleontology by moving the invertebrate fossil collections into Skiff Hall. Work on this reinstallation has been begun: two cases of fossil fish have been reinstalled; skeletons of the Pliocene horse, *Plesippus shoshonensis*, of the Pleistocene bison, *Bison antiquus*, and of the little water deer, *Leptomeryx evansi*, have been mounted and placed on exhibition; and a series showing the development of the camel family in North America (Plate 8) was prepared and installed by Mr. McGrew.

The east half of Skiff Hall now contains the ore collection, and an overflow of non-metallic industrial minerals from the main collection in Hall 36 occupies the west half. The ore collection, after much revision, will be reinstalled in the space it now occupies. The west half of the hall will be occupied by the invertebrate paleontology collection. The non-metallic industrial minerals displaced will be in part moved to Hall 36, in part transferred to the study collection, and in part put in storage until other arrangements for their display can be made. Work of dismantling this exhibit has begun. Most of the cases in this hall came from the Paris Exposition of 1900. They are of an obsolete type not well adapted to museum use. Some of these cases can be modified for use in the future, and others will be replaced.

Hall 36 will remain a hall of non-metallic, industrial minerals. In order to accommodate the collections transferred from Hall 37, it will be necessary to reduce the space now occupied by the petroleum, clay, and soil collections. This can be done with advantage, as they now contain numerous specimens of purely scientific, rather

than general interest. Such specimens are almost identical in appearance, and give the exhibits a monotonous effect that detracts from their appeal. They will be transferred to the study collection where they will be of more use.

Seventeen meteorites not hitherto represented were added to the meteorite collection in Hall 34. The tektite collection, now placed with the meteorites, was enlarged by sixteen specimens. Thirty-nine minerals were added to the mineral collection in the same hall. Two of these, of unusual interest, are remarkably slender selenite crystals from Arkansas, and a chrysoberyl crystal of record size from Colorado. The additions include ten minerals of species not hitherto represented. Seven of these were obtained by the Assistant Curator of Mineralogy on a brief expedition to the eastern states, and three were found in material submitted by the public for identification. Five of these additions are specimens of minerals numbered in the Dana text of 1892. The collection now contains 603 of these numbered species, or 72 per cent of the entire 838. The addition of six this year compares favorably with the average rate of increase of Dana listed species, which has been two and one-half per year for the years from 1894 to 1938.

Over half of the minerals now in the fluorite display are additions for which space was found partly by rearrangement and partly by replacing inferior material. The superior specimens were selected by testing numerous specimens from the regular mineral collection.

The mineral specimens in Hall 34 are now arranged according to the latest current information on the nature and relationships of minerals. Use of the X-ray in mineral study has developed new and radically changed concepts of mineral structure and classification. A codification of the new concepts by a group of eminent mineralogists has been nearly completed. As soon as their results become available a complete reinstallation of the mineral collection will be necessary. On the basis of preliminary reports, the Assistant Curator of Mineralogy has during the past year done much work devising tentative plans for modernization of the exhibit. These plans, which cannot become definite until the new "System of Mineralogy" is available, involve a revision of the scientific classification, a complete relabeling, and the use of supplementary exhibits to add interest and value to the display. Further, the manner of installation will be modified by the use of the new techniques of museum display which are being applied in other halls.

The mineral study collection, consisting of all minerals not on display, is stored in drawers under the exhibits in Hall 34, with an overflow in Room 113-A on the third floor. Their arrangement is orderly, so that any specimen can be found readily. Additions to the collection have so crowded the drawers that there is an increasing danger of damage to delicate specimens, and ready reference by use of the recently completed card catalogue is becoming more difficult. To facilitate use of the classified catalogue, a diagram of all available drawers was prepared, the drawers were numbered, and the drawer number for each specimen entered on the catalogue cards. The minerals are being rearranged in an order corresponding to the arrangement of the cards in the catalogue. In order to reduce crowding of the storage drawers to convenient and safe limits it has been necessary to store some groups temporarily in Room 113-A. The rearrangement is about half finished. When it is complete it will be possible to locate readily any specimen, and to determine quickly and correctly the status of the collection in regard to any mineral or group of minerals. It also makes it easier to recognize weak spots in the collection which should be strengthened. This rearrangement of the study collection is an essential part of the work preliminary to the reinstallation of the exhibited minerals, and it has enabled Mr. Mather, the new Assistant Curator of Mineralogy, to become thoroughly familiar with the collection.

The study collections of rocks and material for economic geology have been little changed during the year. The study and reserve collections in physical geology have been checked, and material of possible use for the new installation in Clarence Buckingham Hall (Hall 35) has been segregated for further selection of exhibition specimens. Reorganization and storage of the reserve collection of invertebrate fossils in Room 111 was completed by the end of August. The collection is now arranged according to geologic periods and major zoological classes. Detailed stratigraphic rearrangements remain to be made but this cannot be undertaken until after a final check of the identifications of the specimens has been completed.

An important and useful work done during the year was the selection and separation of a few of each available species of Paleozoic index fossils from the study collection. This was done to meet a long-standing need of comparative specimens which could be easily reached for the ready identification of faunas and the correlation of horizons. Many serious gaps remain in this collection of index fossils, but these will be filled as additions to the collections permit.

DEPARTMENT OF ZOOLOGY

EXPEDITIONS AND RESEARCH

Of the three zoological expeditions of the year, the most important is the Field Museum Magellanic Expedition, made possible by the generosity of President Stanley Field. Not yet completed, it will continue work in 1940. For the preliminary work of this expedition, Mr. Colin C. Sanborn, Curator of Mammals, Mr. Karl P. Schmidt, Curator of Amphibians and Reptiles, and Mr. John M. Schmidt sailed from New York early in July, and arrived at Callao sixteen days later.

After making necessary arrangements in Lima, the expedition proceeded southward by truck over a new automobile road to Arequipa. In order to obtain some of the rare or little known small mammals, a rare frog, and the toads of the icy highland lakes and streams, as well as the lizards which range almost to the snow line at 16,000 feet, collections were made at various high elevations in southern Peru. Many desirable specimens were collected at Yura (8,000 feet), Juliaca (12,500 feet), Sumbay (13,500 feet), Salinas (14,000 feet), and San Ignacio de Cailloma (14,500 feet). While Curator Sanborn worked in the vicinity of Puno on Lake Titicaca, Curator Schmidt and his son went to Cuzco and from there to a somewhat lower altitude. At the Hacienda Urco in the Urubamba Valley further desirable specimens were obtained.

Using Lima as a base, Curator Schmidt also made short trips to Lake Junin in the central highlands, the Chincha Islands, and via truck on the Pan-American highway to Trujillo and Chiclayo. He returned to the United States at the end of November, but the other members of the party remained in the field.

Curator Sanborn made collections in two of the lower valleys near Arequipa, and then went to Mollendo to join Dr. Wilfred H. Osgood, Chief Curator of Zoology, who assumed leadership of the expedition in October. In the latter part of that month, accompanied by Mr. John M. Schmidt, they sailed for southern Chile. Satisfactory results were obtained in the magnificent Nahuelvute Araucarien forest west of Angol, and in the region around Lake Todos Santos in Llanquihue. On a special trip made by Mr. Sanborn to Laguna Maule, a rare parrot and several desirable small mammals were secured. Early in December the expedition sailed from Puerto Montt for Punta Arenas on the Straits of Magellan.

Among the many persons who rendered assistance to the expedition were Dr. Marshall Hertig, of the Instituto de Hygiene y

Salud, in Lima; Dr. Carlos Nicholson, Professor of Biogeography at the University of Arequipa; Mr. William Vogt, Biological Investigator for the Compania Administradora del Guano, stationed on the Chincha Islands; and Señor Adolfo Schnapka, Manager of the Compania Minera de Cailloma, and other members of the personnel of that company who were hosts to the expedition at its most fruitful high altitude stations. To all of these the Museum expresses appreciation.

An expedition specifically for collecting birds was conducted during the latter part of the year. In August Mr. Melvin Traylor, Jr., in company with Mr. Wyllys Andrews, both of Chicago, proceeded to Yucatan Peninsula, Mexico, to continue the field work which they began in 1937. Headquarters were first established at Chichen Itza, Yucatan, where a representative collection of vertebrates, including approximately 300 birds, was made. Early in December they made a trip into the state of Campeche to obtain supplementary collections from that zoologically interesting region, but the results are not yet known. This expedition, which is financed in part by Messrs. Traylor and Andrews, and in part by the Museum, is expected to return to Chicago in February, 1940.

An expedition to secure material needed for an exhibit of the Florida sea turtle—a group which has been under consideration for several years—left early in May. This work was conducted by Mr. Leon L. Walters, Staff Taxidermist, and Dr. Fritz Haas, Curator of Lower Invertebrates. Dr. Haas engaged in general collecting and in studies for his Division. Mr. Walters found the sandy beach of Sanibel Island a favorable area for observing the egg-laying of the loggerhead turtle, and obtained a female specimen with a shell length of thirty-nine inches, together with eggs, and complete notes on the process of egg-laying.

To the Museum's Zoological Series, twelve publications were added during the year, and twelve signed articles were contributed by the Department staff to *Field Museum News*.

The most notable publication in the Zoological Series was the Author Index, forming Parts I and II, of *A Bibliography of Birds* (938 pages), by Dr. Reuben Myron Strong, of Loyola Medical School, Chicago. About 30,000 articles and books on birds are listed in Parts I and II. Part III, to be published shortly, will contain the Subject Index with the references to each title in Parts I and II grouped alphabetically, geographically, and systematically. The other publications in the Zoological Series were: *New Central Ameri-*

can Frogs of the Genus Hypopachus, A New Lizard from Mexico, A New Coral Snake from British Guiana, and Reptiles and Amphibians from Southwestern Asia, all by Curator Karl P. Schmidt; *A New Australian Lizard with a Note on Hemiergis, Notes on Mexican Reptiles and Amphibians*, and *The Mexican and Central American Lizards of the Genus Sceloporus* (397 pages), all by Dr. Hobart M. Smith; *Eight New Bats of the Genus Rhinolophus*, by Curator Colin Campbell Sanborn; *Malacological Notes*, by Curator Fritz Haas; *Carcinological Notes*, by Associate Claire Nemec, and *Three New Birds of the Genus Stachyris*, by Mr. H. G. Deignan.

For two months in the early part of the year, Curator Sanborn proceeded with a research on bats in European museums, begun in 1938 under his fellowship from the John Simon Guggenheim Memorial Foundation. After studying the large collections of bats in the British Museum (Natural History), he examined those in the Muséum d'Histoire Naturelle in Paris, the Zoologisches Museum in Amsterdam, and the Rijksmuseum van Natuurlijke Historie in Leiden. A study of other large collections of bats in Europe did not then seem advisable.

To complete the *Catalogue of Birds of the Americas*, Associate Curator Charles E. Hellmayr proceeded with his studies of New World birds, working in Geneva, Switzerland, and in London. In co-operation with Mr. Boardman Conover, Research Associate, the manuscript was practically completed for the penultimate part of the *Catalogue*, which will contain the game birds of the Americas. The final part of this notable work, dealing with the birds of prey and some of the lower orders, is being prepared by Dr. Hellmayr.

Besides making studies essential for the preparation of anatomical and biological bird exhibits which are under way, Mr. Rudyerd Boulton, Curator of Birds, continued his research on African birds in this Museum and in the American Museum of Natural History in New York. At the end of the year he made necessary arrangements for the Leon Mandel Caribbean Expedition, sailing January 1, 1940. A full account of this expedition will appear in the 1940 Annual Report.

Shortly after his return in January from the Sewell Avery Zoological Expedition to British Guiana, details of which were given in the 1938 Report, Mr. Emmet R. Blake, Assistant Curator of Birds, began work on a report concerning the British Guiana birds that he obtained on the 1937 and 1938 expeditions to that country. Mrs. Ellen T. Smith, Associate in the Division of Birds, and Mr. Sidney

Camras conducted studies on New World and Ethiopian birds respectively.

The research activities of Mr. Karl P. Schmidt, Curator of Amphibians and Reptiles, included the completion of four publications that appeared in the Zoological Series, further studies on Central and South American amphibians and reptiles, and his many observations recorded in Peru while a member of the Magellanic Expedition. He also continued to serve as Herpetological Editor of *Copeia*, and wrote numerous reviews in that journal. Dr. Hobart M. Smith, who worked in the Division during part of 1938, contributed three papers to the Museum's Zoological Series of publications.

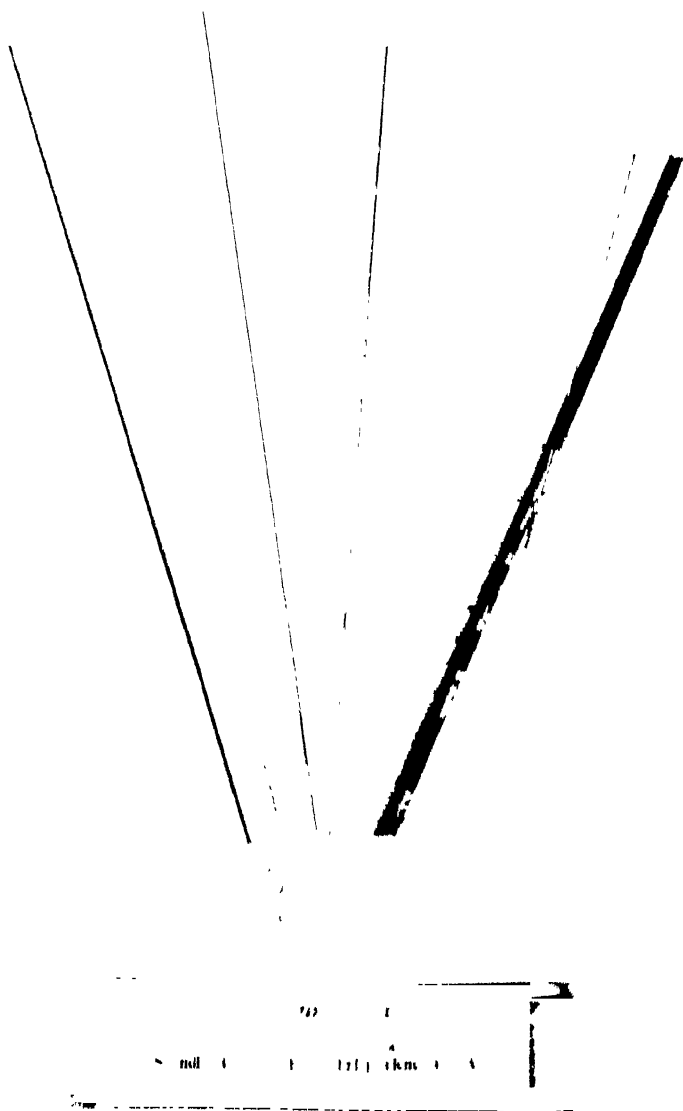
Dissections and study of the carcass of the giant panda, Su-lin, and of the bears and raccoons to which it is supposedly related, were continued by Mr. D. Dwight Davis, Assistant Curator of Anatomy and Osteology. The services of a capable artist and technical assistant assigned to the Division by the Works Progress Administration made it possible to obtain excellent drawings illustrating the anatomy of the giant panda. Mr. Davis also conducted research on an adult male babirussa received from the Brookfield Zoo. This animal is one of the most curiously specialized of all wild pigs, and the anatomy of this species had never been adequately investigated. Study of this specimen revealed a number of interesting features, and a report embodying the results is practically completed.

In the Division of Lower Invertebrates, Dr. Fritz Haas prepared a technical publication for the Museum's Zoological Series, and another was printed in the malacological journal, *Nautilus*. He also wrote a report, not yet published, on the ecology of common marine invertebrates of Sanibel Island, based in part on the results of the Museum's Florida expedition. Miss Claire Nemec, while an Associate in the Division, engaged in research on crustaceans, the results of which were published by the Museum.

For a period of about two and a half months, Staff Taxidermist C. J. Albrecht was engaged, with Mr. Emil Liers, of Homer, Minnesota, in making photographic studies of the life of the otter in various parts of Minnesota, and at Silver Springs, Florida. Successful results in the latter place were due largely to the courtesy of the management of the resort in permitting the use of their pools and "photosubmarines."

ACCESSIONS—ZOOLOGY

In the Department of Zoology the year was notable for the exceptionally large number of specimens received, the total being 64,379.



GYPSUM CRYSTALS
Showing exceptionally long, needle-like development
From Swindler Cave, Cushman, Independence County, Arkansas
Approximately one-half actual size
(Hall 34)

This is more than twice the number accessioned in 1938, which was previously considered a record year for additions to the collections. One acquisition, a gift of 35,076 birds, made up more than half of the total number of specimens acquired. The 381 accessions comprised 1,396 mammals, 36,495 birds, 3,021 amphibians and reptiles, 11,664 fishes, 1,179 insects, and 10,624 lower invertebrates. The accessions received as gifts consisted of 51,952 specimens; by exchange, 2,007; from Museum expeditions, 9,010; and by purchase, 1,410.

Of the 1,396 mammals added to the collection, 357 came as gifts, only a limited number of which are here enumerated, the others being recorded in the list of zoological accessions (p. 128). Among the gifts were thirty-two specimens from the Chicago Zoological Society. From the Lincoln Park Zoo an adult lioness was received. Dr. Harold H. Nelson, of the Oriental Institute of the University of Chicago, presented sixty-three bats from Egypt, and Dr. Henry Field, of Chicago, gave twenty-four specimens of the same class of mammals that were taken in Iraq. For the acquisition of other desirable bats, collected in the countries of the respective donors, appreciation is due to Messrs. Michael Blackmore and J. L. Chaworth-Musters, both of London, England; Mr. H. St. John Philby, of Jidda, Arabia; Dr. L. C. Buckley, of Trang, Siam; and Brother Niceforo Maria, of Bogotá, Colombia. Among the gifts of small mammals were twenty-nine from South Dakota, given by Mr. John M. Schmidt, of Homewood, Illinois; twenty-one from Iowa, presented by Mr. Harold Hanson, of Chicago; forty-four from Illinois and Tennessee, received from Mr. W. J. Beecher, of Chicago; and thirty-one from Mississippi and Florida, presented by Dr. Wilfred H. Osgood, of Chicago.

Nearly nine-tenths of the unusually large number of birds accessioned represented a single gift from an anonymous donor—the largest gift ever received by the Department of Zoology. This most noteworthy acquisition comprises the Louis B. Bishop Collection of North American birds, totaling more than 50,000 specimens, of which 35,076 are now in the Museum. The Bishop Collection (which will always be known by that name) supplements the approximately 30,000 specimens of North American birds previously in the Museum, and it enormously increases the research facilities of this institution. Practically all known forms of American birds found north of Mexico are contained in the new collection, most of them being represented by large series of beautifully prepared specimens. Among the birds

so far received, 32,326 are representatives of North American species and subspecies, 1,222 are miscellaneous tropical American forms, and 1,419 are from the Old World. Particularly noteworthy in this valuable collection are eleven type specimens, sixty-three albinos and mutants, and thirty-three examples of extinct birds.

Other gifts included 146 birds in the flesh, donated by the Chicago Zoological Society; sixty-nine study skins from Mr. Habib Rasool, of Buxton, British Guiana; twenty-two Colombian specimens from Brother Niceforo Maria, of Bogotá, Colombia; and fourteen miscellaneous Asiatic birds presented by Colonel Richard Meinertzhagen, of London, England.

From Mrs. Charles A. Corwin, of Chicago, were received four oil paintings of Laysan Island birds, the work of her late husband, who was Staff Artist at Field Museum. Mr. Michael Lerner, of New York, generously secured and presented a series of photographic studies, including both kodachrome motion pictures and kodachrome slides, of Mount Egmont and vicinity, New Zealand. These studies will be most useful in the preparation of a kiwi habitat group in Hall 20.

The acquisitions of amphibians and reptiles included 734 specimens that were received from various donors. In addition to other material, Mr. H. St. John Philby, of Jidda, Arabia, gave forty-nine snakes and lizards from Arabia. A collection of sixty-four Chilean specimens that came from Dr. Dillman S. Bullock, of Angol, Chile, will prove useful for study in connection with the amphibians and reptiles that may be taken by the Museum's Magellanic Expedition. A gift of eighty-seven tadpoles from Mexico was received from Dr. C. L. Turner, of Evanston, Illinois. Mrs. Robb White, of Thomasville, Georgia, continued to show her interest in the Museum's work by presenting fourteen salamanders and snakes. A collection of fifty-six specimens from Nebraska and South Dakota was given by Mr. John M. Schmidt, of Homewood, Illinois. A donation of 224 salamanders, snakes, and lizards from southern Missouri was made by Dr. Julian A. Steyermark, Mr. Loren P. Woods, and Mr. E. G. J. Falck, of Chicago. The General Biological Supply House, Chicago Zoological Society, Lincoln Park Zoo, and John G. Shedd Aquarium again contributed a number of desirable amphibians and reptiles.

The acquisitions in the Division of Fishes were noteworthy for their scientific value and unusually large number. Nearly nine-tenths, or 10,809, of the specimens received were gifts, and most of

these came from the collectors. A much needed desideratum for the exhibit of fishes was filled by the gift of a very large tarpon received from Mr. Henry Barthman, of Useppa Island, Florida. During his study of stream fishes in the United States, Mr. Loren P. Woods, of Evanston, Illinois, collected 9,361 specimens which he gave to the Museum. From Dr. Henry Field, of Chicago, eighty-six shore fishes from York Harbor, Maine, were received. They will prove useful for comparison with specimens collected by the Rawson-MacMillan Subarctic Expeditions (1926 and 1927-28). Further contributions from the John G. Shedd Aquarium, Chicago, consisted of seventy-six specimens, a small series of which were especially collected in Hawaiian waters for the Museum.

The sixty accessions of insects comprised a comparatively limited number of specimens, of which 589, or about half, represented small donations. Dr. Lewis H. Weld, of East Falls Church, Virginia, presented thirty-three gall wasps and one parasite from Turkey and the western United States. This gift was of especial value in that it included twelve paratypes. Equally welcome, for the same reason, were twenty-one histrid beetles, including eight paratypes, received from Mr. Rupert L. Wenzel, of Chicago. Mr. H. E. Woodcock, of Chicago, gave sixty-two butterflies from Europe and New Mexico; and Dr. Henry Field, of Chicago, supplementing previous gifts, presented 151 specimens of various insects from Iraq.

Gifts of lower invertebrates consisted of 4,077 specimens, amounting to nearly half of the total number added to the collection. Many were of outstanding value. Among the more desirable acquisitions were 585 specimens from southwestern Asia and Maine, received from Dr. Henry Field, of Chicago; 688 lower invertebrates from Central America, contributed by Mrs. George L. Artamonoff, of Chicago; 1,381 specimens, mostly mollusks, from the Puget Sound region, given by Mr. Loren P. Woods, of Evanston, Illinois; and 215 specimens, including a number of crustaceans, from Florida, collected and presented by Mr. Alfred C. Weed, of Chicago.

Among the many vertebrate animals accessioned are 232 specimens that filled needs in the study collection of the Division of Anatomy and Osteology. Of these, 217 were skeletons, and the remaining fifteen were preserved complete for study of the soft anatomy, or were injected with colored masses for research on circulatory systems. Nearly all of these specimens were received in the flesh, and most of them were contributions from the Chicago Zoological Society.

A noteworthy quantity of material was obtained from Museum expeditions. The final results of the year, it is believed, will prove even more satisfactory when the two expeditions in southern Chile and in Yucatan have finished their work. These expeditions are continuing operations into 1940, and much of their 1939 collections will not be received until their return. Assistant Curator Emmet R. Blake, leader of the Sewell Avery Zoological Expedition to British Guiana, returned in January with fifty-one mammals, 500 birds, 160 amphibians and reptiles, and 752 fishes. An account of this expedition, and of its loss of many specimens due to a boat accident, was given in the Report for 1938. On an expedition to Florida for both exhibition and study material, Staff Taxidermist Leon L. Walters and Curator Fritz Haas obtained fifteen turtles, four snakes and lizards, 753 fishes, and approximately 6,000 lower invertebrates. During the preliminary part of the Magellanic Expedition, Curator Colin C. Sanborn and Curator Karl P. Schmidt, assisted by Mr. John Schmidt, collected in Peru 484 mammals, 135 birds, about 1,200 amphibians and reptiles, several hundred fishes and insects, and 306 isopods, crayfish and mollusks. Two members of the staff of the Department of Geology—Assistant Curator Bryan Patterson and Assistant James H. Quinn—gathered incidentally on the Field Museum Paleontological Expedition to Colorado the following specimens for the Department of Zoology: ten mammals, twenty-eight bird skeletons, 105 snakes and lizards, several hundred insects, and 241 lower invertebrates.

The acquisitions obtained by exchanges during the year were noteworthy, and may be classified as follows: mammals, 276; birds, 29; amphibians and reptiles, 1,581; fishes, 101; and insects, 20. Material obtained in this manner is of special value because the specimens requested in return are nearly always wanted for a specific purpose. For Museum publications, thirty-eight small mammals from Chile were acquired from Dr. D. S. Bullock, of Angol, Chile. By an exchange with Mr. G. C. Rinker, of Hamilton, Kansas, sixty-one mammals were received. From the British Museum (Natural History), London, England, 123 specimens were obtained; and by an exchange with the Museum of Comparative Zoology, Cambridge, Massachusetts, fifty-one mammals were procured. The twenty-nine birds acquired by eight exchanges included three genera, nine species, and one race not previously represented in Field Museum. A large collection of Mexican lizards of the genus *Sceloporus*, numbering 1,563 specimens and including the types of nine forms, was received under an exchange agreement with Dr. E. H. Taylor, of the University of

Kansas. Amphibians and reptiles were obtained also by exchange from the Bombay Natural History Society, the Museum of Zoology of the University of Michigan, and the Texas Co-operative Wild Life Research Unit. By a special exchange with Ohio State University, 101 specimens of fishes were procured for the study collection.

To the Museum's large series of birds of prey, there were added 253 specimens from twelve different countries. This addition was made through the fund established by the late Leslie Wheeler and continued in his memory. Mr. Wheeler was a Trustee of the Museum and Research Associate in the Division of Birds. The Emily Crane Chadbourne Zoological Fund made possible the acquisition of 159 miscellaneous birds.

Purchases were neither large nor numerous, barely exceeding a thousand specimens. Among the mammals added to the collection in this manner were 100 specimens from Tanganyika Territory; a ring-tailed cat, four skunks, three deer and sixty-five bats from Mexico; and six African forest hogs, which are being mounted for a group exhibit. Other purchases included 205 amphibians from northern California; 101 specimens from Ecuador; forty-one snakes, lizards, and turtles from Arkansas; and 419 butterflies and moths from Ecuador.

CATALOGUING, INVENTORYING, AND LABELING—ZOOLOGY

In the catalogues of the Department, 18,477 entries were made during the year. By subject they are divisible as follows: mammals, 981; birds, 12,329; amphibians and reptiles, 2,681; fishes, 459; and lower invertebrates, 2,027. The entries for vertebrates include 261 anatomical and osteological specimens.

The rearrangement of the mammal collection, involving the reattaching of the original labels to skins received prior to 1908, was steadily continued. For the rearrangement program and for the acquisitions of the year, 1,675 skin and 1,500 skull labels were typed, 4,425 skin labels were attached to specimens, and 3,200 labels for skulls were placed in vials and boxes. The specimen cards typed, checked with the catalogue, and filed, aggregated 14,055. To prevent the intermingling of the skins with their skulls in vials and boxes, 3,146 wooden strips were placed as separators in the trays containing comparatively small specimens. Other work on the collections included the arrangement of thousands of specimens in a taxonomic and numerical order.

The activities of the Division of Birds were mainly directed to the care of new material and the reorganization of the research

collection. Among the 12,329 catalogue entries were 11,632 skins, 501 sets of eggs, 193 skeletons and three birds in alcohol. In continuing the rearrangement of the collection, much time was devoted to checking identifications, relabeling, and indexing the specimens both systematically and geographically. In the species files, 11,441 specimens were recorded in this manner.

In carrying forward necessary improvement of the Museum's large collection of birds' eggs, the services of four persons, on the average, were made available. The sets of eggs that were sorted and boxed numbered 4,550, and 3,020 sets were placed in trays with cotton and arranged in their systematic order. The specimen cards, original data slips, and the labels of 2,210 sets were carefully checked and permanently filed or attached. Approximately 3,000 specimen cards and labels were typed for this work. To permit a more uniform expansion of the collection, all of the egg drawers were shifted.

Old birdskins, or skins received from inexperienced collectors, sometimes need to be renovated, repaired, or degreased. This important attention was given to 1,624 specimens by two or three taxidermists assigned to the Museum by the Works Progress Administration.

To all of the 3,021 amphibians and reptiles received in 1939, individual tag numbers were attached, and the specimens were recorded under 2,681 catalogue entries. As in the past, duplicate specimens were given the same catalogue and tag number. For the permanent index to the collection, 1,106 cards were compiled and typed, and 800 bibliographic cards were added to the files. In addition to the usual work of sorting, injecting, identifying, and distributing new material, attention was also given to the replacement of alcohol in the specimen containers.

Although the services of an assistant were available to the Curator of Fishes for only seven months of the year, there was no curtailment in the care of the collection or in its continued improvement. The new labels written, number tags attached to specimens, and the index cards typed and filed reached a total of 8,530, and the rearrangement of the containers on the shelves required the examination and handling of 15,658 specimens. A large amount of weak or discolored alcohol was removed from many jars and tanks and replaced.

The cleaning of all old accumulations of skeletons in the Division of Anatomy and Osteology made it possible to arrange the entire collection so that the material is accessible for ready reference. A

notable beginning has been made on a well-prepared series of animals for study of the soft anatomy. This small collection has already proved its value in connection with research projects. A total of 655 skulls were cleaned for the Division of Mammals, and 247 skeletons were prepared, numbered, and labeled.

The insects received were, for the most part, pinned, labeled, and distributed according to their respective families. For eight months of the year a WPA worker compiled, typed, and filed 5,590 bibliographic cards on North American butterflies. As a volunteer worker for nearly two months, Dr. Eugene Murray-Aaron added 5,395 more index cards to the bibliographic file. In the latter part of the year a WPA worker respread 803 butterflies and pin-labeled 264 insects of various orders.

In the Division of Lower Invertebrates attention was given mainly to identifying, numbering, and labeling new and old unclassified material, especially mollusks and crustaceans. There were 2,027 entries made in the catalogue, and 650 old entries were revised, but the total number of specimens recorded, numbered, and card-indexed was 21,300, of which 18,500 were mollusks. Until nearly the end of August, Miss Claire Nemec, volunteer Associate, sorted, classified, and labeled many of the Museum's miscellaneous crustaceans.

In nearly all divisions of the Department, valuable assistance was rendered by volunteer or student workers. In the Division of Birds, Mr. Albert Vatter, of Glenview, Illinois, worked for three months, principally on American finches. For varying periods of time, four students aided in the work of the Division of Amphibians and Reptiles. Mr. Fred Bromund continued to list and check the Museum's collection of crocodiles. Messrs. Robert A. Burton, John Kurfess, and Robert Guillaudeu assisted in the naming and distributing of North American material, in checking and relabeling specimens in large tanks, and in preparing scale counts of snakes. During ten months of the year, Miss Charlotte D. Stephany did secretarial work in the Division, as a volunteer. Another volunteer worker was Mr. Walter Serbowski who, during his spare time, did considerable clerical work in the Division of Fishes.

INSTALLATIONS AND REARRANGEMENTS—ZOOLOGY

Two large habitat groups of birds were completed and placed on exhibition in Hall 20, and a Hall of Invertebrates (exclusive of arthropods), designated as Hall M, was opened to the public. Additions to the synoptic exhibits of mammals and birds were also made.

To the series of horned and hoofed mammals in George M. Pullman Hall (Hall 13) were added two antelopes and a chamois. The specimens were mounted by Taxidermist Julius Friesser and Assistant Taxidermist Frank Wonder. One of these animals was a Hunter's antelope obtained by the Harold White-John Coats African Expedition (1930); the second was a topi, an antelope collected in eastern Africa by the late Carl E. Akeley on a Museum expedition in 1906; and the third was a good example of the well-known chamois, from Yugoslavia, presented by Father Sholar Wencel, of Peru, Illinois.

With live giant pandas now available at zoos for study, it was found advisable to remount the two specimens in the Museum's group of these animals in William V. Kelley Hall (Hall 17). This work was done also by Messrs. Friesser and Wonder.

In Hall 15, which contains a systematic collection of mammals of the world other than the horned and hoofed ones in George M. Pullman Hall, a case of rodents was reinstalled in an attractive manner by Taxidermist W. E. Eigsti. Twelve of the specimens were renovated and placed on groundwork bases. Two specimens were added to the series, namely, a Malabar giant squirrel, and a rukupi, which is a large rock-inhabiting rodent from Peru. The exhibit of marsupials in the same hall was enlarged by the addition of two specimens, also mounted by Mr. Eigsti. These were a red-necked wallaby with its young, and a dama wallaby or pademelon, which is a small wallaby that lives in dense scrub or among tall marsh grass in southwestern Australia and on the islands off the coast. A number of additional mammals mounted in 1939 are, for various reasons, awaiting installation. They include a bush pig, river hog, about thirty fur seals, five gibbons, and two bats.

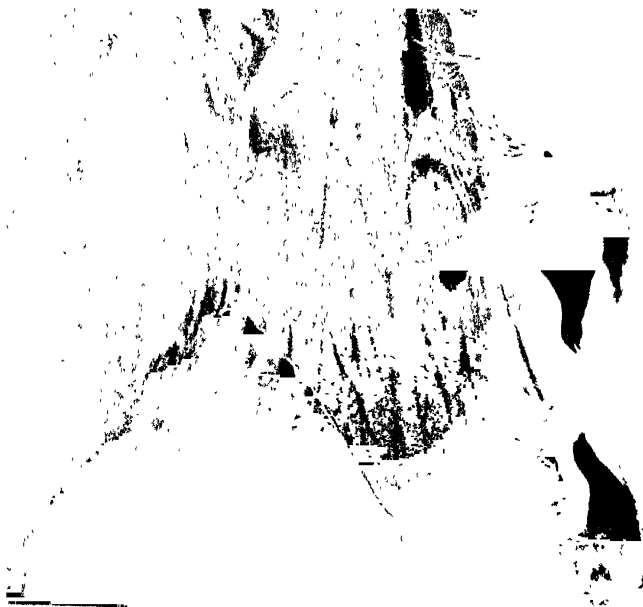
The first of the two bird exhibits opened to public view in Hall 20 was a habitat group of the rhea, a large flightless bird of the pampas of southern Brazil and Argentina. In the group is an adult rhea standing beside its nest, which contains thirty eggs and two chicks in the process of hatching. Other birds present are a burrowing owl, a tinamou, and a flycatcher. The background, which was painted by Staff Artist Arthur G. Rueckert, illustrates the vast plains or campo of Matto Grosso, Brazil, where the specimens were collected by Assistant Curator Emmet R. Blake on the Stanley Field Zoological Expedition to British Guiana and Brazil. The birds in this group were mounted by Staff Taxidermist John W. Moyer; and the foreground, for which 60,000 blades of grass were



RED GROUSE

Taxidermy by John W. Moyer

*Background by Arthur G. Rueckert. Accessories by Frank H. Lett
(Hall 20)*



made, was produced under the direction of Mr. Frank H. Letl, Preparator of Accessories.

The other new exhibit in Hall 20 is an attractive habitat group of the red grouse. These are game birds well known to sportsmen of the Old World. The group is intended to represent the moors of Selkirkshire, Scotland, in October. Seven birds are shown on or near patches of snow on one of the heather-covered hills of the region. In the background, painted by Staff Artist Rueckert, are portrayed similar hills with intervening cultivated valleys. The birds were mounted by Taxidermist Moyer, and the foreground was constructed under the direction of Mr. Letl.

A temporary exhibit, based on the Bishop Collection of North American birds, was prepared and displayed for six weeks in Stanley Field Hall. Two cases were used: the specimens in one illustrated seasonal plumage changes, geographical variation, and range of color within a genus; in the other case were shown rare and extinct birds of North America. Another temporary exhibit in Stanley Field Hall was a case of various birds' eggs. After the Easter period this exhibit was moved to the west end of Hall 21. A base for five geese and swans was prepared by WPA workers for a case in the series of foreign birds arranged in systematic order in Hall 21. By the same workers, the albino mammals and birds at the east end of that hall were renovated and reinstalled. For an addition, to be made in 1940, to the exhibit of foreign birds, seventeen ducks and geese were mounted by Taxidermist Moyer.

A further increase was made by Taxidermist Leon L. Walters in the number of reproductions prepared for use in the reinstallation of cases in the Hall of Reptiles (Albert W. Harris Hall—Hall 18). The new life-like reproductions in pyralin and cellulose-acetate include a brightly colored wood frog and the six-lined lizard of the Chicago region; two Florida reptiles which are blind worm-like lizards; a Javanese water snake, and a Central American rat snake.

A number of specimens have been accurately reproduced for a new Hall of Fishes which, it is believed, will be opened to the public in 1940. For the Maine and the Texas fish groups in the new hall, Taxidermist L. L. Pray has prepared fifty-three and twenty specimens respectively. Many accessories for these groups have already been installed.

Good progress was made on the preparation of material for exhibits of a biological and anatomical nature. Seventeen enlarged models were completed to illustrate the life history of a frog and a

salamander; and six models, likewise enlarged, were finished for an exhibit to portray the history and mechanism of the muscular system. These models were made under the direction of staff members including Messrs. Karl P. Schmidt, D. Dwight Davis, and Frank H. Lett. Ready for installation are models and preparations, both enlarged and natural size, for showing the external and internal structure of birds. These were skillfully prepared by Miss Nellie Starkson, under the direction of Mr. Rudyerd Boulton, Curator of Birds.

Except for a small series in Stanley Field Hall, invertebrate animals have not been represented for a number of years among the zoological exhibits. This omission was in great part corrected early in April, when a Hall of Invertebrates (exclusive of insects and their allies) was opened to the public. The new hall, designated as Hall M, contains thirteen cases illuminated in a pleasing manner by a new type of enclosed fluorescent lights. Specimens are displayed on appropriate bluish-green backgrounds. Five of the cases contain the most interesting and attractive examples of more than a hundred families of mollusks, including the cephalopods, some of which are represented by glass models. An individual case protects a specimen of the largest known bivalve shell, the giant clam of the Pacific and Indian oceans. In the seven other cases are sea-stars, corals, hydroids, sponges, models of protozoans, etc. Suspended from the ceiling are models of a giant squid and a giant octopus, representing specimens which were among the largest known.

Because more storage and laboratory space was urgently required for the rapidly increasing collection of amphibians and reptiles, it was found necessary to reassign the adjoining room for this purpose. Desirable changes and improvements were made in this room, which hitherto had been occupied by the bird taxidermist, Mr. John W. Moyer. Three two-sided cases and four wall cases were constructed to permit the expansion of the study collection in this room. For the bird taxidermist, a space especially designed for the purpose was enclosed and equipped in the south end of the fourth floor.

THE N. W. HARRIS PUBLIC SCHOOL EXTENSION

The work of the Harris Extension staff was directed principally toward three objectives: the maintenance and restoration of existing exhibits to attain a uniform high standard; the promotion of closer co-operation with the public schools in the solution of their problems

in science instruction; and the development of the Department's collections of material for lending.

Approximately 250 local plant specimens were collected during the year for addition to a reference herbarium from which teachers may borrow material for use in the presentation of certain subjects in botany. By this means it will be possible for instructors to obtain accurately named specimens in a sufficient number to cover adequately at one time a particular aspect of the local flora. This type of loan material is intended to supplement the life-like plant models now in circulation.

Plant specimens collected previously, numbering 930, were determined and mounted on herbarium sheets by the Department of Botany. Common names and family relationships were included on typewritten labels attached to the sheets, and each sheet was covered with a transparent wrapping material for protection.

Specimens were collected for the construction of models already under way or planned for the near future, and numerous molds were made for this purpose.

Material relating to the life history of the honeybee was received from Mr. Ellsworth Meineke, of Arlington Heights, Illinois. Besides specimens showing wax production, pollen collecting, and other features of bee life, Mr. Meineke provided a brood frame with live bees in an observation hive. The material is being used to complete exhibits upon which considerable work has already been done.

Forty articles relating to Chicago area Indians, and fifty examples of Mexican pottery, clothing, and Aztec carvings (the last-named in plaster of Paris casts) were transferred from surplus storage material in the Department of Anthropology to the Harris Extension. Dr. Nora Brandenburg, of Chicago, gave fourteen specimens of Indian beadwork obtained on the Rosebud Reservation of South Dakota in 1912. Odd as it may seem, some of the specimens were excellent examples of the type of work done by Indians of the Chicago area.

Approximately 1,500 insects were obtained by purchase for addition to a reserve collection for the replacement of damaged specimens in existing exhibits, or the preparation of new exhibits dealing with insects.

Twenty new installations were completed during the year. These include two duplicate cases showing cliff swallows nesting on a limestone cliff. The descriptive labels for these cases display a map outlining the migration routes of the cliff swallow. This addition

to the label is an example of the attempts now being made to present as many different aspects of a subject as possible.

Two exhibits illustrating the progressive feather changes of the starling were prepared. They show six stages of development and molting. The starling was selected because it is a simple example of birds with only one annual molt.

Four similar cases pertaining to the olive were completed. They contain realistic models of an olive branch in fruit, displayed in association with important economic products of the industry. Photographs and other material needed for the completion of these exhibits were given by the Sylmar Packing Corporation, of Los Angeles, California.

Material relating to the Indians of the Chicago area was installed in eight cases. These exhibits were assembled and installed in response to a special request. They represent the beginning of a new series of cases which are expected to be of special interest to school children.

An exhibit of eight species of fungi was installed in one case. This case is a distinct improvement upon a previous similar exhibit which it replaces. Duplicate exhibits of common flies, moths, and oaks were prepared and installed.

Seven schools were added to the list of those receiving Harris Extension cases, and five were removed for various reasons. The net gain of two brings the total now served to 474.

During 1939, seventeen deliveries or loans of two cases each were made to an average of 473 schools and institutions. The 946 cases thus kept in constant circulation suffered no significant damage to their contents while in the schools, although the cabinet of one exhibit was broken beyond repair. Ten, or slightly more than one per cent, suffered damage to woodwork; in twenty-nine, or slightly above 3 per cent, the front glasses were broken, and on sixty, or 6.3 per cent, the sliding label frames were injured. Thus it is seen that the sliding label frames, which are in the nature of an appendage to the case proper, are the most vulnerable part of the assembly. To strengthen the supports for the frames, in an effort to reduce such damage, forty-four cases were equipped with auxiliary label guides. Fifty-nine cases were fitted with new solid bottoms, replacing plywood bottoms which had split, or in which the layers of wood had separated. "Hanger strips," which relieve the corners of the cabinets from all strain when the cases are hung on hooks, were added to forty-three cases.

One hundred and thirty-two cases with either black or gray interiors were painted buff. In reinstalling the material in the newly painted cases, every practical effort was made to improve appearance by changes in layout, additions of material, or methods of attachment. The guiding policy has been to bring all of the existing exhibits to a uniform standard of quality as quickly as possible, postponing time-consuming replacements or detailed refinements until later.

In addition to the regular circulation of exhibits, thirty-three loans totaling 146 cases were made in response to special requests. Twelve of these loans included collections of unattached objects which could be handled by the pupils. In some instances, where the nature of the specimens permits, this procedure is believed to represent a desirable innovation with added educational advantages.

A comprehensive loan of Mexican material, including four standard cases, as well as foodstuffs, articles of clothing, pottery, and Indian artifacts, was made to the Peterson Elementary School in connection with a school assembly program on Mexico.

Small sets of unmounted rocks and minerals were lent to each of the eight district science advisors of the public elementary schools. In addition, two collections of unmounted rocks, minerals, soils, and fossils, comprising specific objective material needed for instruction in a sixth grade unit of study in science, were lent. Organizations other than schools which received special loans of cases were the Evanston Public Library, the Garden Club of Evanston, the book section of Marshall Field and Company's retail store, the United Charities Camp at Algonquin, Illinois, the Glenwood Park Training Camp (a WPA project) at Batavia, Illinois, and the International Live Stock Exposition at the Union Stock Yards, Chicago.

A new room on the ground floor, near the service entrance to the Museum, was provided for the storage of the school cases. By storing them on shelves, instead of hanging them on racks as was done formerly, a great saving of valuable space has been effected. Cases which once occupied a floor area of 2,214 square feet when in storage on the third floor, now require only 1,190 square feet. A further move toward greater efficiency was the construction of four work tables in the new room in order that cleaning, polishing, and minor repairs may be done close to where the cases are stored. The location of the storerooms also saves valuable time by eliminating trucking of cases to the third-floor area formerly occupied.

The work of placing additional identifying numbers on each of the portable cases available for circulation was completed. The

new numbers were stenciled in a color that harmonizes with the case finish and yet provides greater legibility than the original black figures. Only a title number distinguished the cases formerly, and since there were several cases with different characteristics under each title, it was difficult to locate definitely a particular case once it was out of the Museum.

The two Museum trucks traveled a total of 11,659 miles in the distribution of cases. During the school summer vacation all necessary work was completed to maintain the trucks in good mechanical condition.

The renewed effort on the part of school authorities to stress science instruction in the grade schools has served to emphasize the importance of the work being done by the Harris Extension. Numerous letters of appreciation sent to the Museum by school teachers and principals confirm this opinion.

THE JAMES NELSON AND ANNA LOUISE RAYMOND FOUNDATION FOR PUBLIC SCHOOL AND CHILDREN'S LECTURES

The year 1939 has been one of marked activity in the James Nelson and Anna Louise Raymond Foundation. As in the past, entertainments have been presented in the James Simpson Theatre, guide-lecture tours have been given for an increased number of organizations, and extension lectures in the schools have been broadened in scope. The "radio follow-up" programs begun in 1938 in correlation with the presentations of the Public School Broadcasting Council, were continued. A special series of talks was arranged for the guidance of science teachers in the elementary grades, and an experimental series of educational programs by television was given in co-operation with the Zenith Radio Corporation.

ENTERTAINMENTS FOR CHILDREN—RAYMOND FOUNDATION

Three series of motion picture entertainments and one special patriotic program were arranged for the young people of the community. The programs were as follows:

SPRING COURSE

February 25—The Grasshopper and the Ant (*cartoon by Walt Disney*); Cartoon-land Mysteries; The Plow That Broke the Plain; Neptune's Mysteries.

March 4—How to Know Our Spring Birds; Where Bananas Ripen; Rainbow Natural Bridge; Service Afloat.

- March 11—Father Noah's Ark (*cartoon by Walt Disney*); Living Jewels of the Surf; Sponge Divers of Tarpon; Monkey Business; Old Sea Chanties.
- March 18—Mr. and Mrs. Goldfinch; Cheeka the Indian Lad: Cheeka's Home; Cheeka's Canoe; Cheeka and the Caribou; The Proud Seminoles.
- March 25—Pioneer Days (*cartoon by Walt Disney*); The Strange Duck-billed Platypus; Thrills of Bali.
- April 1—The Declaration of Independence;* Elephants of Today.
- April 8—Busy Beavers (*cartoon by Walt Disney*); In Faraway Manchukuo; We're on Our Way; The Life of a Plant; Spotted Wings.
- April 15—Bill and Bob Trap a Mountain Lion; Our Four-footed Helpers; The Trumpeter; Majorca the Picturesque; Wild Life on the Amazon.
- April 22—Birds in the Spring (*cartoon by Walt Disney*); Chumming with Chipmunks; Leaping Through Life; Pottery Makers of the Southwest; Nature's Armor.
- April 29—In Nature's Workshop; Let's Save a Life; Mountains of Alaska; Our Zoo Acquaintances.

SUMMER COURSE

- July 6—The Musical Farmer (*cartoon by Walt Disney*); "Cimarron" (acted by chimpanzees); Hungarian Gypsy Dances; Grass—A Story of Persia.
- July 13—William Tell—A Story of Switzerland.
- July 20—Frolicking Fish (*cartoon by Walt Disney*); Footprints and Bicycles; Water Fun; Adventures of a Mongrel Pup.
- July 27—The Gang (Boy Scout life).
- August 3—The Busy Beavers (*cartoon by Walt Disney*); The Lovely Taj Mahal; The Navaho Demon; Babies in the Woods.
- August 10—The Wedding of Palo—A Story of Eskimo Life in Greenland.

AUTUMN COURSE

- October 7—Jolly Little Elves (Technicolor cartoon); The 17-year Locust; Hummingbirds at Home; Plants and Animals Prepare for Winter.
- October 14—Gathering of the Clan; Boxing with Kangaroos; Columbus:* (a) At the Court of Isabella; (b) Landing on American Shores.
- October 21—Animal Aristocracy; The "Father of Waters"; Romantic Mexico.
- October 28—Fun with Don Heaton in the Wild West (Mr. Heaton in person).
- November 4—Land of the Giants; Sea-going Thrills on the *Wander Bird*; Oriental Methods of Traveling; Glimpses of Old China.
- November 11—Armistice Day Program: Famous Dixieland Spirituals; The Pilgrims Land at Plymouth;* The Signing of the Declaration of Independence;* The Moon and Its Features.
- November 18—Hunting Musk Ox with the Polar Eskimos; Hunting Walrus; Eskimo Life in Southern Greenland; In the Land of the Reindeer.
- November 25—Winter (*cartoon by Walt Disney*); Learning to Ski; Sonja Henie, the Champion Skater; Life Under the South Seas; The Naas River Indians.

* Yale Chronicles. Gift of the late Chauncey Keep.

In addition to the afore-mentioned series of entertainments, a special program was given on Washington's Birthday featuring the films "Washington as a Boy," and "Washington as a Man."

The total number of motion picture programs offered in the James Simpson Theatre was twenty-five, and the attendance at

these children's entertainments was 31,363. Of this number, 10,926 attended the spring course, 4,797 the summer course, 14,079 the autumn series, and 1,561 the special patriotic program.

Publicity was given to the programs by the *Chicago Daily News*, *Chicago Tribune*, *Chicago Herald-American*, *Chicago Daily Times*, and *Downtown Shopping News*, as well as many neighborhood and suburban papers.

FIELD MUSEUM STORIES—RAYMOND FOUNDATION

Several changes were made in the stories for children prepared by members of the Raymond Foundation staff. The name was changed from *Museum Stories for Children* to *Field Museum Stories*. Each story became a number of a looseleaf series to be kept constantly in print for distribution at the Museum Book Shop. The form was enlarged to fit into binders of average size, and the back page of each story was left blank for notes of the recipient or purchaser. The Book Shop carried binders which were sold at a low cost to those attending the showings of the motion pictures.

Following is the list of *Field Museum Stories* for 1939:

Series XXXII—Shadow Shows and Puppet Plays; Nature's Bridges; Animals of the Surf; A Birch Bark Canoe; The Strange Platypus; Elephants of Today; In Faraway Manchukuo; Horns and Antlers; Pueblo Pottery; Nature's Crystals.

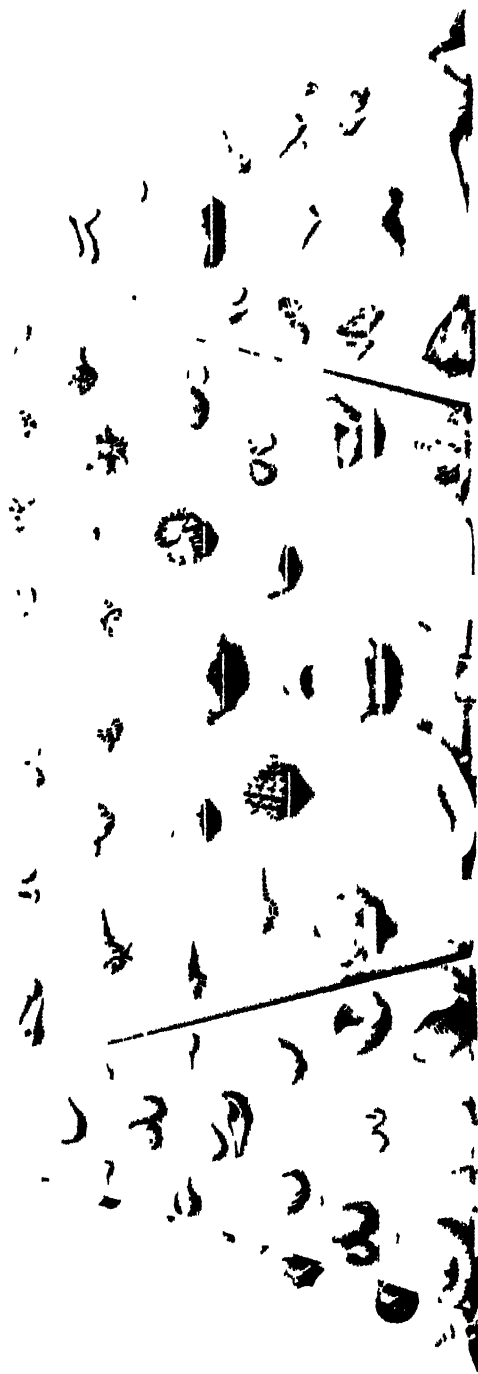
Series XXXIII—Why Leaves Change Color; Poisonous Snakes of the Western World; The Quetzal—Sacred Bird of the Aztecs; Sand-Paintings of the Navaho Indians; Chinese Writing; The Man in the Moon; The Walrus and the Narwhal; The Potlatch.

A total of 28,000 Museum Stories was distributed to those attending the Saturday morning programs.

LECTURE TOURS FOR CHILDREN—RAYMOND FOUNDATION

The use of the exhibition halls for classwork was extended to the following groups by means of conducted tours:

	Number of groups	Attendance
Tours for children of Chicago schools:		
Chicago public schools	507	18,407
Chicago parochial schools	40	1,482
Chicago private schools	11	188
Tours for children of suburban schools:		
Suburban public schools	294	8,992
Suburban parochial schools	20	657
Suburban private schools	6	95
Tours for special groups from clubs and other organizations	222	8,354



MOLLUSKS

Type of revised installation of lower invertebrates
(Hall M)

Guide-lecture service was thus given to 1,100 groups, and the aggregate attendance was 38,175. Several of the schools receiving the tour service were also given illustrated talks in the Lecture Hall preceding the tour of the exhibition halls. These talks introduced the groups to the subjects in which they were to receive instruction, and oriented them for the tours. The leaders of the groups expressed themselves most enthusiastically regarding this type of Museum activity. As in 1938, many groups came from outside of the state. On December 5 and 7, the Museum was host to parties of 4-H Club boys and girls who visited the Museum for special tours of the halls devoted to prehistoric plant and animal life, prehistoric man, the living races of mankind, and the animal exhibits. The total number of delegates to the National Congress of 4-H Clubs who attended these special tours was 1,018.

EXTENSION LECTURES—RAYMOND FOUNDATION

Extension lectures were offered to groups in educational institutions as in the past. For the first time, the lecturers have gone to the hospitals in which the Board of Education maintains teachers for confined pupils. Talks were given before groups of both ambulatory and bed cases with most satisfactory results. The number of lectures presented before camp, church, and club groups also increased. A new and more attractive form of lecture list was sent out giving the subjects of lectures offered for presentation in classrooms, laboratories and auditoriums. The subjects offered to high school groups were as follows:

The Dynamic Earth and Its Meaning to Man; Animals and Plants of Prehistoric Ages; The Natural Fauna of the Chicago Region; The Natural Flora of the Chicago Region; Prehistoric Man; Ancient Roman Life; Egyptian Customs and Art; Behind the Scenes at Field Museum; Taxidermy at Field Museum (demonstration to groups of 75 or less).

The subjects offered to elementary schools were:

FOR GEOGRAPHY AND HISTORY

North American Indians: Woodland Indians, Plains Indians, The Pueblos and the Navahos; Migisi, the Indian Lad; Mexico, the Land of the Feathered Serpent; Caribbean Lands (sugar, coffee, cacao, rubber, chicle, bananas, mahogany); South America; Life in Hot and Cold Lands; The Romans; The Egyptians; Prehistoric Peoples; Glimpses of Chinese Life.

FOR SCIENCE GROUPS

The Changing Earth: Earth History, Work of Wind and Water, Geography of the Chicago Area; Prehistoric Plants and Animals; Insect Friends and Enemies; Snakes and Their Relatives; Coal and Iron; Animals of the World at Home; Chicago Birds, Animals, Trees, Wild Flowers; Our Outdoor Friends; Nature in City Yards and Parks; Behind the Scenes at Field Museum.

Extension lecture service was given as follows:

	Number of groups	Attendance
Elementary school groups.....	459	164,663
High school groups	63	17,985
Camps, clubs, and other organizations.....	82	4,029

The extension lectures given by the staff of the Raymond Foundation thus totaled 604, and the aggregate attendance was 186,677.

RADIO PROGRAMS—RAYMOND FOUNDATION

The staff of the Raymond Foundation again co-operated with the Public School Broadcasting Council by presenting two series of programs which followed radio broadcasts given by the Council. These programs were based upon Museum exhibits which correlated with the subjects of the broadcasts. Meetings were held in the Lecture Hall and the James Simpson Theatre, according to the number in attendance. The audiences were composed of representatives of the grades most interested in the subjects being discussed. Mimeographed information sheets were distributed, sample materials examined, and informal discussions encouraged. The meetings were followed by tours of the halls devoted to the topic of the day. The subjects were: Meteorites; Tree Growth Rings; Spring Wild Flowers; Grasses and Forage Plants; Protective Coloration. Twelve groups came to the Museum for assistance along these lines, and the attendance was 1,228 pupils.

TELEVISION PROGRAMS—RAYMOND FOUNDATION

During the months of September and October, Field Museum entered an entirely new field of activity. In co-operation with the Zenith Radio Corporation, it participated in a series of experimental programs of an educational nature over the television station W9XZV. Members of the Raymond Foundation staff were the speakers, and they were televised, as were the stereopticon slides, exhibition objects, living reptiles, and pictures they used to illustrate their subjects. The topics on which the lecturers spoke were: Introduction to Field Museum; The Story of the Earth; Native American Food Plants; Life Stories of Snakes; Hunters, Herders, and Farmers; Expeditions and Their Value to Chicagoans. A second series is to be presented during the early part of 1940.

TEACHERS' TRAINING COURSE—RAYMOND FOUNDATION

The science supervisors of the Chicago Public Schools co-operated with Field Museum in presenting a series of talks and tours for the

benefit of those teachers engaged in teaching science in the third, fourth, fifth, and sixth grades. The meetings were concerned with the science course presented to elementary grades during the first half of the 1939-40 school year. On November 4, the fifth and sixth grade teachers were guests of the Museum, and on November 18, third and fourth grade teachers received assistance. The subjects treated were: Earth History; Rocks and Minerals; Trees and Fungi; Bird Migrations; Cats, Dogs, and the Deer Family; Animals of the World; Winter Birds; Soil Erosion. The talks in the Lecture Hall were followed by tours and discussions. The comments of supervisors and teachers indicate that this type of Museum activity is of great importance to the teachers of the city and suburbs. Three hundred and fifty-four teachers took advantage of the programs offered.

ACCESSIONS—RAYMOND FOUNDATION

For use in the Theatre, Lecture Hall, and in extension lectures, the Raymond Foundation acquired 1,513 stereopticon slides made by the Division of Photography. The Museum Illustrator, and assistants furnished by the Works Progress Administration, colored 839 of these.

The Foundation also received from Dr. Henry Field five large colored transparencies of Egyptian subjects; from Mr. John R. Millar, fifteen colored slides illustrating preparation of exhibits; and from the Chicago Slide Company, one slide of a Huon Gulf coconut shell cup.

LECTURE TOURS AND MEETINGS FOR ADULTS—RAYMOND FOUNDATION

Guide-lecture service was made available without charge to clubs, conventions, hospital student groups, church groups, and other organizations, and to Museum visitors in general. During July and August, morning tours as well as afternoon tours were given. Monthly schedules of tours offered were printed, and copies distributed at the main entrance of the Museum. City and suburban libraries and other civic organizations co-operated by distributing the schedules. Tours for the public included 101 of a general nature, and 194 on specific subjects. In the 281 groups which participated the gross attendance amounted to 5,117 persons. There were also special tours for 163 groups from colleges, clubs, hospitals, and other organizations, with 3,809 in attendance.

The Raymond Foundation assisted in the commencement exercises held on June 8, for 1,077 foreign-born adults. As in past

years, the James Simpson Theatre was made available to the Board of Education for the purpose.

The use of the Lecture Hall was granted to several groups for meetings of various kinds. Among these were the science teacher meetings, lectures for school groups, club meetings, and the radio follow-up programs. In all, thirty-one groups, totaling 2,547 persons, were served by the Raymond Foundation in the Lecture Hall.

SUMMARY OF ATTENDANCE AT ENTERTAINMENTS, LECTURES, ETC.

The various activities of the James Nelson and Anna Louise Raymond Foundation for Public School and Children's Lectures reached a grand total of 2,205 groups with an aggregate attendance of 268,765.

LECTURES FOR ADULTS

The Museum's seventy-first and seventy-second courses of free lectures for adults were presented in the James Simpson Theatre on Saturday afternoons during the spring and autumn months. As in past years, they were illustrated with motion pictures and stereopticon slides. Following are the programs of both series:

SEVENTY-FIRST FREE LECTURE COURSE

- March 4—Where Falls the Yellowstone.
Mr. Alfred M. Bailey, Colorado Museum of Natural History, Denver.
- March 11—Rainbow River.
Mr. Martin K. Bovey, Concord, Massachusetts.
- March 18—Tropical Brazil.
Mr. James C. Sawders, Nutley, New Jersey.
- March 25—Africa Speaks Again.
Dr. Paul C. Hoefler, Los Angeles, California.
- April 1—The Basket Maker Indians in Eighth Century Colorado.
Dr. Paul S. Martin, Field Museum of Natural History.
- April 8—Life Among the Alaskan Eskimos.
Mr. Elder C. Anderson, Minneapolis, Minnesota.
- April 15—Colorful Caribbean Shores.
Mr. William B. Holmes, Evanston, Illinois.
- April 22—Mysterious Kinabalu.
Mr. Harold J. Coolidge, Jr., Museum of Comparative Zoology, Cambridge, Massachusetts.
- April 29—Western Wild Flowers.
Mr. John Claire Monteith, Hollywood, California.

SEVENTY-SECOND FREE LECTURE COURSE

- October 7—A Naturalist's Diary.
Mr. Karl Maslowski, Cincinnati, Ohio.
- October 14—Through Africa Unarmed.
Mr. Lewis N. Cotlow, New York City.
- October 21—The Life Story of the Otter.
Mr. C. J. Albrecht, Field Museum of Natural History.

- October 28—Wings from the North.
Mr. Martin K. Bovey, Concord, Massachusetts.
November 4—Wonders of Plant Life.
Mr. Arthur C. Pillsbury, Berkeley, California.
November 11—What Is Biblical Archaeology and Why?
Dr. Nelson Glueck, Director of American School of Oriental
Research, Jerusalem.
November 18—The Tundra Speaks.
Dr. Arthur C. Twomey, Carnegie Museum.
November 25—Stratosphere Exploration.
Major Chester L. Fordney, Great Lakes, Illinois.

At these seventeen lectures the total attendance was 16,596 persons, of whom 9,608 attended the spring series, and 6,988 the autumn series.

LAYMAN LECTURE TOURS

Mr. Paul G. Dallwig, volunteer member of the Museum staff with the title of The Layman Lecturer, continued his popular Sunday afternoon lecture tours of Museum exhibits during all except the summer and early autumn months. As in the previous seasons since this activity was inaugurated in 1937, demands for accommodations were so large that, to keep the groups participating within limits practicable for handling, it was necessary strictly to limit their size, and to require reservations in advance. In many instances, reservation lists were filled several weeks in advance. In all, Mr. Dallwig conducted thirty parties, and the aggregate attendance was 2,647, or an average of 88 persons on each lecture tour. This average is higher than that of 1938 (which was 80), although the total attendance was slightly lower due to the fact that lecture tours were given on four fewer Sundays.

Presenting his subjects from a new point of view, Mr. Dallwig carries into his work the enthusiasm and accuracy of a true scientist. His interpretations of the subjects, presented in wholly non-technical terms, make science easily understood and appreciated by his audiences.

It should be emphasized that Mr. Dallwig's activities are wholly altruistic. He receives no compensation, direct or indirect, from either the Museum or his audiences. His only reward is in the satisfaction that he is performing a notable service to the public and to the cause of science.

The subjects presented by Mr. Dallwig during 1939 were as follows:

January (four Sundays)—Parade of the Races (Hall of Man).

February (four Sundays)—Gems, Jewels and "Junk" (Hall of Minerals and the Gem Room).

March (four Sundays)—Nature's "March of Time" (Hall of Historical Geology).
 April (five Sundays)—Digging Up the Cave Man's Past (Hall of the Stone Age of the Old World).
 May (four Sundays)—Parade of the Races (Hall of Man).
 November (four Sundays)—Gems, Jewels and "Junk" (Hall of Minerals and the Gem Room).
 December (five Sundays)—Parade of the Races (Hall of Man).

SUMMARY OF ATTENDANCE AT LECTURES, ETC.

Instruction or similar service was rendered by the Museum to a total of 2,252 groups comprising 288,008 individuals. These figures include all those reached in the 2,205 groups aggregating 268,765 children and other persons who participated in the various activities under the auspices of the James Nelson and Anna Louise Raymond Foundation, in addition to the 16,596 who attended the lectures for adults in the James Simpson Theatre, and the 2,647 who participated in the Sunday afternoon tours presented by the Layman Lecturer.

THE LIBRARY

Steady growth in the Museum Library's collections, and a notable extension of the services rendered through them to scientists and to the public generally, marked the year 1939. With new acquisitions, the total number of books and pamphlets on the shelves reached a total of approximately 118,000. Simultaneously with the expansion of the available literature, there has occurred a growing recognition of the Library's position as a leading reference collection in its specialized fields. This is shown by the large number of persons, both research workers and laymen, who have made use of its facilities, which include many rare and valuable works not duplicated in any other institution in the Middle West, and some not to be found elsewhere in the United States as a whole. Especially gratifying has been the fact that the Library has been consulted by students and instructors from colleges, universities, secondary institutions, and other schools. Actually, the seating capacity of the Reading Room has at times been taxed by groups of this type of reader. They have come not only from schools in Chicago and its immediate vicinity, but have included some from far distant localities, north, south, east, and west.

An important development of the year was the renewal of subscriptions to a number of periodicals which had been discontinued in previous years, and the addition of a few others considered especially valuable. Among the periodicals added are: *Animal and*

Zoo, Chronica Botanica, Botanical Miscellany, Fossilium Catalogus, Monumenta Serica, Palaeontographica Americana, Rabenhorst: Cryptogamenflora Deutschlands, Temminckia, and Bronn's Tierleben.

Progress has been made also in filling out incomplete files of the publications of various learned societies and institutions, many of which are received through exchanges for publications issued by Field Museum. Containing reports of scientific work being carried on in many parts of the world, the publications thus received from co-operating institutions are invaluable to Field Museum's scientific staff and to other scholars. The Library's plans embrace continuing efforts toward filling the remaining gaps in the files of such publications.

In addition to obtaining new exchanges, it has fortunately been possible to complete by purchase the files of many other publications which were hitherto incomplete.

A problem was presented by the beginning of the European war, which had an immediate adverse effect on the receipt of many foreign publications. Some of these ceased publication altogether for the duration of the conflict; others were curtailed in size, and became irregular in appearance; a number which have managed to carry on thus far face a precarious future.

The Library has benefited by the foreign expeditions of members of the Museum staff. Incidental to their work in the field, Museum men have made many valuable contacts with other scientific institutions, and these have resulted in the establishment of new exchange relationships of a highly desirable nature.

During the latter months of the year, an experienced book-binder was employed to recondition valuable books which had deteriorated due to age.

The acquisition of a number of new map cases is important. These permit the assemblage in one place of maps that previously were scattered in various parts of the building, thus making it more convenient for persons desiring to refer to them. It also facilitates proper care of the maps, some of which were in need of repairs when received in the Library. This work is in progress. Usefulness of the maps has been increased not only by their greater accessibility in the new location, but also by a catalogue, consisting of approximately 1,100 cards, prepared by Mr. Peter Gerhard, of Winnetka, a volunteer worker whose services in this project are greatly appreciated.

Another addition to the Library is a new case especially for rare books. Although it is not the policy of the Museum to purchase

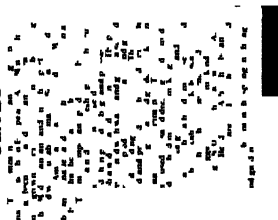
books simply because of rarity, but rather for their pertinence to the fields of knowledge in which the Museum and its Library are specializing, a number of books of great rarity have nevertheless accumulated as a result both of gifts and purchases. Some of these were published in the very early days of printing. Most of them are noteworthy for their significance in the history of science. Because of their age and value they require special care which the new book-case makes possible.

Some space on the Library shelves, required for the expanding collections, was made available by returning to the Library of Congress fifty-two volumes of the early Reports of the Secretary of War, which did not properly fall within the scope of a library of natural history.

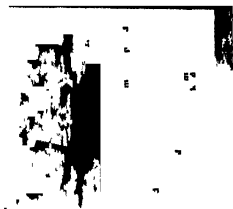
Many persons and institutions have contributed generously to the Library. From the Carnegie Institution, of Washington, D.C., there have again been received, as in previous years, many publications which have a bearing upon research work in progress at Field Museum. Useful botanical works were presented by Dr. E. E. Sherff, the Museum's Research Associate in Systematic Botany. Mr. Stanley Field, President of the Museum, continued his custom of presenting, as they are published, the issues of the *Illustrated London News* in which appear many notable pictures and articles on scientific subjects, particularly in archaeology. Among others who are donors of periodicals on a regular basis are Mr. Elmer S. Riggs, Curator of Paleontology; Dr. Henry Field, Curator of Physical Anthropology; Mr. William J. Gerhard, Curator of Insects; Mr. Karl P. Schmidt, Curator of Amphibians and Reptiles; and Mr. Clifford C. Gregg, Director of the Museum. Members of the staff who have given other books include Dr. Field; Dr. Albert B. Lewis, Curator of Melanesian Ethnology; Mr. Paul C. Standley, Curator of the Herbarium; Mr. Henry W. Nichols, Chief Curator of Geology; Dr. Paul S. Martin, Chief Curator of Anthropology; and Mr. J. Francis Macbride, Associate Curator of the Herbarium.

Among other donors of especially valuable books are Dr. Sylvanus G. Morley, of the Carnegie Institution, Washington, D.C.; Miss Margaret Ennis, of Chicago; Dr. Eugene Murray-Aaron, of Chicago; Mr. W. T. Stearn, of London, England, and Mrs. Georg Vetlesen, of New York. Mrs. Vetlesen's gift consisted of two beautifully prepared volumes on Chinese jade carvings (sixteenth to nineteenth centuries). These books, prepared by Mr. Stanley Charles Nott, describe and picture objects in Mrs. Vetlesen's own collection.

OLIVES



OLIVES



PORTABLE NATURAL HISTORY EXHIBIT FOR CHICAGO SCHOOLS
Prepared by the N W Harris Public School Extension of Field Museum

One sixth actual size

Among important purchases of the year should be mentioned the following: Linden and Rodigas, *Lindenia* (12 vols.); Franz Werner, *Catalog der Conchylien Sammlung* (3 vols.); Seler, *Gesammelte Abhandlungen zur Amerikanischen Sprach und Alterthumskunde* (5 vols.) (translation); De Toni, *Sylloge Algarum*; *La Nuova Notarisia* (1889-1925); S. Umehara, *Objects from the Old Tombs of Chun T'sung in Lolang*; Edgeworth, *Cranial Muscles of Vertebrates*; Kappers and others, *Comparative Anatomy of the Nervous System*; *Indian Arts and Letters* (new series, vols. 2-8); and D. A. Bannerman, *Birds of Tropical Africa* (vols. 2-5).

As in previous years, the Library acknowledges with gratitude the courtesies extended to it by the Library of Congress, Washington, D.C.; the John Crerar Library, Chicago; the Library of the University of Chicago; the Library of the American Museum of Natural History, New York; the Library of the Peabody Museum at Harvard University; the Columbia University Library, New York; and the Library of the Missouri Botanical Garden, St. Louis.

Special mention should be made of the untiring work of Mrs. Emily M. Wilcoxson, Librarian, and Mrs. Mary W. Baker, Associate Librarian, for their ceaseless efforts in classifying and making available to scientists and other research workers the tremendous store of scientific information on deposit at Field Museum Library.

PUBLICATIONS AND PRINTING

As in previous years, the Museum distributed generously the numerous publications issued during 1939. To the institutions and individual scientists on its exchange lists the Museum last year sent 14,894 copies of scientific publications, 1,557 leaflets, 99 miscellaneous publications and pamphlets, and 288 copies of large maps showing tribal allocation in the Near East. Domestic and foreign distributions were about equal. An increase of twenty-eight was made in the number of names on the domestic and foreign exchange lists.

The Museum also sent 3,797 copies of the *Annual Report of the Director* for 1938, and 621 copies of leaflets, to Members of the institution.

Sales during the year totaled 2,330 scientific publications, 7,737 leaflets, and 12,033 miscellaneous publications and pamphlets, such as Guides, Handbooks, and Memoirs.

Sixteen large boxes containing 2,787 individually addressed envelope parcels and 307 wrapped packages of publications were

shipped to the Smithsonian Institution at Washington, D.C., through whose bureau of international exchanges distribution was made to foreign destinations. Grateful acknowledgment is made of this courtesy. An approximately equal quantity of these books was sent by stamped mail to domestic institutions, libraries, and scientists on the exchange lists.

For future sales and distribution, 22,518 copies of various publications and leaflets were wrapped in packages, labeled, and stored in the stock room.

A notable volume has been added to the Zoological Series by the publication of the first two parts of *A Bibliography of Birds*, by Dr. Reuben Myron Strong. This bibliography is intended as a guide to the literature of the many phases of the biology of birds, rather than as an index to everything that has ever been written about them. It is hoped that the book may serve as a stimulus to those who are interested in things about birds other than their names, places in the scheme of classification, and regions in which they live.

Another important volume published is *Contributions to the Anthropology of Iran*, by Dr. Henry Field. It is accompanied by two maps, size 19 x 24½ inches, which show the distribution of tribes in Iraq and in western Iran.

Two interesting leaflets were issued during the year in the botany series. They are *Carnivorous Plants* and "*The Man-Eating Tree*," and *Mistletoe and Holly*.

The sale of 1,538 copies of *The Races of Mankind* and *Prehistoric Man* again gives evidence of the great amount of public interest in these two subjects.

The total number of post cards sold during 1939 was 92,325, of which 11,762 were grouped into 554 sets.

The Museum issued a colored post card of its habitat group of wild turkey, reproduced from a natural color photograph made by Mr. Clarence B. Mitchell, Research Associate in Photography at Field Museum. One new black and white view, also a zoological subject, was added to the assortment of individual post cards.

Production of the Division of Printing included twenty-eight new numbers in the Museum's regular publication series. These comprised 3,152 pages of type composition. Five of these were anthropological in subject matter, four botanical, five geological, thirteen zoological, and one was the *Annual Report of the Director* for 1938. The aggregate number of copies of these printed by

Field Museum Press was 29,707. Of three indexes—one zoological and two botanical—consisting of 94 pages, 2,481 copies were printed. In the two new botanical leaflets issued, the number of pages was 50, and the copies aggregated 4,544. A reprint totaling 3,564 copies of the nineteenth edition of the *General Guide*, containing 56 pages and six illustrations, was issued. An eighth edition of the *Handbook of Field Museum*, consisting of 76 pages, was also issued, followed by a reprint, the two printings totaling 2,786 copies. The total number of pages printed in all books was 3,504; the total number of copies issued was 43,082.

Miscellaneous job work, the total of which exceeded that of any previous year, consumed a large part of the time in the Division. Of major importance was the printing of twelve issues of *Field Museum News*, which was increased to eight pages per issue at the beginning of the year, with an average of 5,000 copies a month. This increase made it possible to amplify the information sent out monthly to the members of the Museum, and others. Exhibition labels printed for all Departments of the Museum during the year reached a total of 4,996. Other impressions, including *Field Museum News*, Museum stationery, posters, lecture schedules, post cards, etc., brought the total for the year to 1,012,326.

The splendid record of achievement in the field of publications is in no small sense due to the careful and efficient work of Miss Lillian A. Ross, editor and proofreader, whose knowledge and ability in the field of scientific publication have made possible comparatively large scale production with a negligible minimum of error. The responsibility for the distribution of Museum publications in turn rests upon the capable shoulders of Mrs. Elsie H. Thomas, who has carefully systematized her office in order to eliminate loss of time between the pressroom at Field Museum and scientific libraries throughout the world.

A detailed list of publications follows:

PUBLICATION SERIES

- 435.—Zoological Series, Vol. 24, No. 1. New Central American Frogs of the Genus *Hypopachus*. By Karl P. Schmidt. January 30, 1939. 6 pages, 1 text-figure. Edition 843.
- 436.—Zoological Series, Vol. 24, No. 2. A New Lizard from Mexico, with a note on the genus *Norops*. By Karl P. Schmidt. January 30, 1939. 4 pages, 1 text-figure. Edition 800.
- 437.—Zoological Series, Vol. 24, No. 3. A New Australian Lizard, with a note on *Hemiergis*. By Hobart M. Smith. January 30, 1939. 4 pages, 4 text-figures. Edition 822.
- 438.—Zoological Series, Vol. 24, No. 4. Notes on Mexican Reptiles and Amphibians. By Hobart M. Smith. January 30, 1939. 22 pages, 1 text-figure. Edition 828.

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- 439.—Botanical Series, Vol. 20, No. 1. The Myxophyceae of Maryland. By Francis Drouet. February 28, 1939. 14 pages, 1 text-figure. Edition 1,096.
- 440.—Geological Series, Vol. VI, No. 23. A New Amphicyon from the Deep River Miocene. By Paul O. McGrew. March 24, 1939. 10 pages, 5 text-figures. Edition 859.
- 441.—Geological Series, Vol. VI, No. 24. New Pantodonta and Dinocerata from the Upper Paleocene of Western Colorado. By Bryan Patterson. March 24, 1939. 34 pages, 12 text-figures. Edition 850.
- 442.—Zoological Series, Vol. 25, Part I. A Bibliography of Birds. Author Catalogue, A to J. By Reuben Myron Strong. March 22, 1939. 464 pages. Edition 1,365. (Combined with Publication No. 457.)
- 443.—Report Series, Vol. XI, No. 3. Annual Report of the Director for the year 1938. January, 1939. 170 pages, 12 plates. Edition 5,585.
- 444.—Anthropological Series, Vol. XXIII, No. 3. Modified Basket Maker Sites, Ackmen-Lowry Area, Southwestern Colorado, 1938. By Paul S. Martin. June 27, 1939. 196 pages, 86 text-figures, 1 colored plate, 19 maps. Edition 739.
- 445.—Zoological Series, Vol. 26. The Mexican and Central American Lizards of the Genus *Sceloporus*. By Hobart M. Smith. July 27, 1939. 398 pages, 31 plates, 59 text-figures. Edition 811.
- 446.—Anthropological Series, Vol. XX, No. 3. Archaeology of Santa Marta, Colombia. The Tairona Culture. Part II, Section 2. Objects of Pottery. By J. Alden Mason, with an appendix on ceramic technology by Donald Horton. August 15, 1939. 146 pages, 85 plates, 26 text-figures. Edition 625.
- 447.—Zoological Series, Vol. 24, No. 5. Eight New Bats of the Genus *Rhinolophus*. By Colin Campbell Sanborn. September 19, 1939. 8 pages. Edition 928.
- 448.—Zoological Series, Vol. 24, No. 6. A New Coral Snake from British Guiana. By Karl P. Schmidt. September 19, 1939. 4 pages, 1 text-figure. Edition 915.
- 449.—Zoological Series, Vol. 24, No. 7. Reptiles and Amphibians from Southwestern Asia. By Karl P. Schmidt. September 19, 1939. 44 pages, 1 text-figure. Edition 894.
- 450.—Zoological Series, Vol. 24, No. 8. Malacological Notes. By Fritz Haas. September 19, 1939. 12 pages, 3 text-figures. Edition 799.
- 451.—Zoological Series, Vol. 24, No. 9. Carcinological Notes. By Claire Nemec. September 19, 1939. 4 pages, 3 text-figures. Edition 817.
- 452.—Zoological Series, Vol. 24, No. 10. Three New Birds of the Genus *Stachyris*. By H. G. Deignan. September 19, 1939. 6 pages. Edition 835.
- 453.—Botanical Series, Vol. XVII, No. 6. Genus *Labordia*. Hawaiian Euphorbiaceae. Labiatae and Compositae. By Earl Edward Sherff. September 19, 1939. 168 pages. Edition 920.
- 454.—Geological Series, Vol. VI, No. 25. A Specimen of *Elasmosaurus serpentinus*. By Elmer S. Riggs. October 31, 1939. 8 pages, 3 text-figures. Edition 849.
- 455.—Geological Series, Vol. VI, No. 26. *Nanodelphys*, an Oligocene Didelphine. By Paul O. McGrew. October 31, 1939. 8 pages, 1 text-figure. Edition 827.
- 456.—Geological Series, Vol. VII, No. 5. Radioactive Determination of Protactinium in Siliceous Terrestrial and Meteoritic Material. By Robley D. Evans, Jane L. Hastings, and Walter C. Schumb. October 31, 1939. 8 pages. Edition 1,180.
- 457.—Zoological Series, Vol. 25, Part II. A Bibliography of Birds. Author Catalogue, K to Z. By Reuben Myron Strong. November 30, 1939. 474 pages. Edition 1,350. (Combined with Publication No. 442.)
- 458.—Anthropological Series, Vol. 29, No. 1. Contributions to the Anthropology of Iran. By Henry Field. December 15, 1939. 508 pages, 20 text-figures, 1 map. Edition 750.

- 459.—Anthropological Series, Vol. 29, No. 2. Contributions to the Anthropology of Iran. By Henry Field. December 15, 1939. 198 pages, 4 text-figures, 144 plates. Edition 750.
 Map A. Distribution of Tribes in Iraq. Size $19 \times 24\frac{1}{2}$ inches. (To accompany "The Anthropology of Iraq," by Henry Field, Anthropological Series, Vol. 30.) Edition 1,000.
 Map B. Distribution of Tribes in Western Iran. Size $19 \times 24\frac{1}{2}$ inches. (To accompany "Contributions to the Anthropology of Iran," by Henry Field, Anthropological Series, Vol. 29.) Edition 1,000.
- 460.—Botanical Series, Vol. 20, No. 2. Francis Wollé's Filamentous Myxophyceae. By Francis Drouet. December 22, 1939. 50 pages, 1 text-figure. Edition 1,050.
- 461.—Botanical Series, Vol. 20, No. 3. The Planktonic Freshwater Species of Microcystis. By Francis Drouet and William A. Daily. December 22, 1939. 20 pages. Edition 1,000.
- 462.—Anthropological Series, Vol. 31, No. 1. Anthropometric Observations on the Eskimos and Indians of Labrador. By T. Dale Stewart. December 30, 1939. 164 pages, 16 plates, 1 text-figure, 1 map. Edition 625.
 Botanical Series, Vol. XVIII. Index. January, 1939. 46 pages. Edition 831.
 Botanical Series, Vol. XIII, Part II. Index. February, 1939. 24 pages. Edition 824.
 Zoological Series, Vol. XX. Index. July, 1939. 24 pages. Edition 826.

LEAFLET SERIES

- Botany, No. 23. Carnivorous Plants and "The Man-Eating Tree." By Sophia Prior. 20 pages, 8 plates. February, 1939. Edition 2,044.
 Botany, No. 24. Mistletoe and Holly. By Sophia Prior. 30 pages, 8 text-figures. December, 1939. Edition 2,500.

HANDBOOK SERIES

- Handbook. Information concerning the Museum—its history, building, exhibits, expeditions, endowments, and activities. Eighth edition. February, 1939. 76 pages, 8 plates, 1 cover design. Edition 2,248.
 Handbook. Eighth edition (reprint). February, 1939. 76 pages, 8 plates, 1 cover design. Edition 538.

GUIDE SERIES

- General Guide to Field Museum of Natural History Exhibits. Nineteenth edition (reprint). 1939-40. 56 pages, 9 text-figures, 1 cover design. Edition 3,564.

PHOTOGRAPHY AND ILLUSTRATION

Negatives, prints, photographic enlargements, lantern slides, transparencies, etc., produced in the Division of Photography during 1939 totaled 23,385 items. Of these the great majority were to fulfill requirements of the various Departments and Divisions of the Museum, but the total includes also 461 prints, enlargements, and slides made for sales on orders received from outside the Museum.

The Staff Photographer and his Assistant were responsible for the production of 9,139 of the total items. The remainder were the work of several workers assigned by the federal Works Progress Administration. The Museum men did the work which required

most skilful attention, and that performed by WPA workers was more routine in character, consisting chiefly of making prints, largely of type specimens of plants for the Herbarium from negatives secured in Europe as a result of a project of the Department of Botany.

Continuance of the important task of classifying, indexing, and numbering negatives and prints, and maintaining the collection of negatives in the files in systematic order, was made possible by clerical helpers furnished by the WPA. In this work, more than 47,000 items were handled. Without such systematization, the usefulness of the photographic files would be greatly decreased.

The Museum Collotyper and his assistant produced a total of 830,737 prints. These included illustrations for publications and leaflets, covers for books and pamphlets, picture post cards, headings for lecture posters, and miscellaneous items.

Work performed by the Museum Illustrator included the making of 51 drawings, coloring of 400 stereopticon slides, retouching of 94 photographs, blocking of 96 photographic negatives, and various other tasks.

PUBLIC RELATIONS

The year 1939 was marked by improvement of *Field Museum News*, the monthly bulletin sent to all Members of the Museum. Its size was increased from four to eight pages, its typographical makeup was changed to afford better legibility, and its editorial content was expanded. The publication of some longer articles, and of a greater variety of articles, both long and short, was thus made possible. The number of illustrations was also increased. The twelve issues of the year constituted the tenth volume, and, as during the previous nine years of publication, copies were sent promptly to all Members at the beginning of each month. Among new features were: a series of editorials under the heading "From the Director's Desk"; various articles of considerable length which enabled members of the scientific staff to present their reminiscences of expeditions; expositions of certain interesting angles of scientific research and technique, and historical phases of various subjects illustrated by the exhibits. Again, as in 1938, the use of a four-color illustration was made possible as a result of the contribution, by Mr. Clarence B. Mitchell, Research Associate in Photography, of color photographs he made, and the special process plates from which to print reproductions of them. Mr. Mitchell's four-color illustration this year showed the Museum's wild turkey group, and appeared in

the November issue as a Thanksgiving feature, accompanied by a special article written by the Curator of Birds.

Besides maintaining constant contact between the Museum and its Members, and keeping them informed of the institution's activities, *Field Museum News* serves as a form of correspondence between this Museum and institutions all over the world on publication exchange lists. It also functions as a medium of publicity, supplementing the mimeographed news releases circulated by the Division of Public Relations. Many of the articles in the *News* were reprinted or quoted in newspapers and magazines.

Through general publicity, every effort was made by the Museum to keep the public promptly, constantly, and thoroughly informed of all the institution's activities. The 321 news releases, prepared and distributed to daily newspapers by the Public Relations Counsel during the year, covered all Museum services for the public such as lectures, children's programs, tours, etc., and also such activities as the installation of new exhibits, the dispatching of expeditions, and the results of research conducted by the scientific staff. In many cases, the releases were accompanied by photographs. The scope of the Museum's news distribution includes not only the several great metropolitan dailies of Chicago which naturally are a primary objective, but also long lists of small community papers published in various sections of the city, the foreign language papers which reach groups of Chicagoans of various national origins, and the principal papers published in the suburbs of Chicago and in medium-sized cities in Illinois and neighboring states. Those news releases possessing more than local interest in this region were given national, and even international, circulation through the co-operation of such news agencies as the Associated Press, United Press, International News Service, Science Service, Wide-World Photos, and others. Certain of the more important individual newspapers in some of the largest cities of the Atlantic and Pacific coasts, because of the interest they have evinced in the Museum's news, are also carried on the mailing lists, and in some instances, notably the *New York Times*, have given about as much space to the Museum as the local press.

As in the past, editors of newspapers and magazines, whose interest was aroused by general releases, sent their own staff writers and photographers to develop special stories on Museum activities. Likewise, in a number of cases, news from Field Museum excited comment in the editorial columns of leading newspapers. In its publicity efforts, notable co-operation was extended to the Museum

by the *Chicago Daily News*, which showed greater sympathy with and understanding of the aims and mission of the Museum than any other Chicago newspaper. Appreciation is due also to the *Chicago Tribune*, *Chicago Daily Times*, *Chicago Evening American*, and *Chicago Herald-and-Examiner* (the last-named two merged during the year to become the *Chicago Herald-American*), *Chicago Journal of Commerce*, and *Downtown Shopping News*. Among weekly and monthly periodicals showing great interest in the Museum's work were the *Illustrated London News*, *This Week in Chicago*, *National Corporation Reporter*, *Travel*, and others. Of special note was a full-page reproduction in natural colors of the Museum's habitat group of quetzal, the "national bird" of Guatemala, which was published in the *Illustrated London News* (issue of March 25, 1939). This, like the *Field Museum News* color plate previously mentioned, was made from a color photograph taken by Mr. Mitchell.

At the request of the General Electric X-ray Corporation, arrangements were made whereby there was lent to that company an Egyptian mummy from the Museum's Department of Anthropology, for use in an exhibit at the New York World's Fair. There the mummy was installed in an exhibit with fluoroscopic apparatus which revealed its interior to the public. This resulted in considerable publicity, in which the representatives of the X-ray corporation, the United Air Lines (by which the mummy was shipped), and the Museum collaborated.

Other forms of publicity which kept the Museum in the public attention included a number of broadcasts on various radio stations and networks; the display of placards advertising Museum exhibits and lectures; and the distribution of many thousands of folders announcing the Sunday afternoon lecture tours presented by Mr. Paul G. Dallwig, the Layman Lecturer, as well as folders giving general information about exhibits, Museum tours, admission, etc. Greatly appreciated is the continued co-operation of the Chicago Rapid Transit Lines, the Chicago Surface Lines, the Chicago, Aurora and Elgin Railroad, the Chicago, North Shore and Milwaukee Railroad, the Chicago and Northwestern Railway, and the Illinois Central System, all of which displayed Museum placards at their stations or in their passenger cars. In addition to these companies, which have placed their advertising media at the Museum's disposal without charge for many years, in 1939 the Chicago Motor Coach Company likewise co-operated by displaying Field Museum cards on its busses. Invitations, accompanied by

folders, were sent to the delegates attending several hundred conventions held in Chicago, and served to bring many of the city's visitors to the Museum. Folders were distributed also through hotels, office buildings, transportation companies, commercial organizations, department stores, libraries, schools, travel bureaus, and other public institutions. Posters advertising the lecture courses were also displayed in some of these establishments.

MEMBERSHIP

It is most encouraging to be able to report an increase in the number of Museum Members for 1939. The total number of memberships recorded as of December 31, 1939, is 4,171. It is gratifying also to report a decrease in the number of Members who found it necessary to resign from membership during 1939. To these former Members an expression of appreciation is due for their past support, and an invitation is extended to them to resume their association with the cultural activities of the institution whenever they may find it possible again to enroll as Members.

An acknowledgment of appreciation and gratitude is made to the many Members who have so loyally continued their support of the institution, and to the many new Members who have become associated with it. Such public-spirited support is an essential aid to the successful continuance of the cultural program of Field Museum.

The following tabulation shows the number of names on the list of each of the membership classifications at the end of 1939:

Benefactors	23
Honorary Members	12
Patrons	25
Corresponding Members	7
Contributors	121
Corporate Members	47
Life Members	261
Non-Resident Life Members	12
Associate Members	2,389
Non-Resident Associate Members	8
Sustaining Members	7
Annual Members	1,259
Total Memberships	4,171

The names of all persons listed as Members during 1939 will be found on the pages at the end of this Report.

In the pages which follow are submitted the Museum's financial statements, lists of accessions, *et cetera*.

CLIFFORD C. GREGG, *Director*

COMPARATIVE ATTENDANCE STATISTICS AND DOOR RECEIPTS

FOR YEARS 1938 AND 1939

	1939		1938
Total attendance.....	1,410,454		1,891,580
Paid attendance	83,518		91,097
Free admissions on pay days:			
Students	76,651		46,861
School children	92,946		126,554
Teachers	3,084		2,900
Members	1,156		1,255
Admissions on free days:			
Thursdays (52)	212,455	(52)	196,003
Saturdays (52)	379,337	(52)	354,543
Sundays (52)	561,307	(51)	572,367
Highest attendance on any day (June 2)	58,002	(May 20)	47,794
Lowest attendance on any day (January 30) ..	8	(April 6)	101
Highest paid attendance (September 4)	2,442	(Sept. 5)	3,115
Average daily admissions (363 days)	3,885	(363 days)	3,834
Average paid admissions (207 days)	403	(208 days)	433
Number of guides sold	8,607		7,219
Number of articles checked	22,374		22,604
Number of picture post cards sold	92,325		108,194
Sales of publications, leaflets, handbooks, portfolios, and photographs	\$4,819.18		\$7,601.13

COMPARATIVE FINANCIAL STATEMENTS

FOR YEARS 1938 AND 1939

INCOME	1939	1938
Endowment Funds.....	\$198,455.79	\$191,247.11
Funds held under annuity agree- ments.....	25,728.52	28,878.51
Life Membership Fund.....	10,659.18	11,903.16
Associate Membership Fund...	11,697.08	12,843.41
Chicago Park District	86,098.85	117,904.31
Annual and Sustaining Member- ships.....	11,555.00	11,020.00
Admissions.....	20,879.50	22,774.25
Sundry receipts.....	20,012.66	19,757.51
Contributions, general purposes.	298.65	25,961.22
Contributions, special purposes (expended <i>per contra</i>)....	55,399.14	28,172.28
Special funds—part expended this year for purposes designated (included <i>per contra</i>).....	14,457.31	15,276.54
	<u>\$455,236.68</u>	<u>\$485,738.30</u>
EXPENDITURES		
Collections.....	\$ 38,256.62	\$ 9,918.28
Operating expenses capitalized and added to collections...	43,749.41	43,731.66
Expeditions.....	14,549.75	13,159.97
Furniture, fixtures, etc.....	18,247.70	24,923.14
Wages capitalized and added to fixtures.....	8,766.55	6,141.68
Pensions and Group Insurance..	49,281.28	15,361.67
Pensions, past service liability..	220,096.71
Departmental expenses.....	42,019.41	42,860.28
General operating expenses...	313,676.76	311,591.69
Extraordinary building repairs..	37,311.66
Annuities on contingent gifts...	29,506.39	30,044.40
Interest on loans.....	1,229.00
Paid on bank loans	26,600.00	9,400.00
Reserve for extraordinary building repairs and me- chanical plant depreciation	25,000.00
	<u>\$872,062.24</u>	<u>\$508,361.77</u>
Deficit..	\$416,825.56	\$ 22,623.47
Contribution by Mr. Marshall Field....	415,138.78	19,530.00
Net Deficit..	<u>\$ 1,686.78</u>	<u>\$ 3,093.47</u>
Notes payable January 1.....	\$ 26,600.00	\$ 36,000.00
Paid on account.....	26,600.00	9,400.00
Balance payable December 31..	<u>.....</u>	<u>\$ 26,600.00</u>

THE N. W. HARRIS PUBLIC SCHOOL EXTENSION

	1939	1938
Income from Endowment.....	\$18,158.00	\$16,883.42
Operating expenses	16,509.32	15,773.74
December 31.....Balance	<u>\$ 1,648.68</u>	<u>\$ 1,109.68</u>

LIST OF ACCESSIONS

DEPARTMENT OF ANTHROPOLOGY

ANDERSON, MRS. MILDRED, Chicago: 1 jungle belt—Dakar, French West Africa (gift).

ANONYMOUS DONOR, Chengtu, Szechwan, China: 60 ceramic specimens from kiln sites, 2 T'ang dynasty pottery heads—Szechwan, China (gift).

ARMSTRONG, A. LESLIE, Warrington, England: 3 deer antler picks—Grimes Graves, Suffolk, England (gift).

AUGUR, MURRAY B., ESTATE OF, Chicago: 38 Indian specimens from Sioux, Kiowa, Apache, and Navaho of Kansas, Nebraska, Oklahoma, and Arizona (gift).

BENN, MRS. ALONZO NEWTON, Chicago: 1 serape—northern Mexico (gift).

BUFFALO MUSEUM OF SCIENCE, Buffalo, New York: 127 miscellaneous ethnological specimens—New Guinea, Melanesia, and Micronesia (exchange).

BURDICK, MISS NINA, Chicago: 1 basket—Makah Indians, Vancouver Island, British Columbia (gift).

CARPENTER, MRS. GEORGE A., Chicago: 1 pottery jar, Bizen ware, more than 100 years old—Japan (gift).

CARSON, ROBERT S., New York: 13 pottery fragments of typical black and gray ware—site of Ch'eng-tsu-yai excavation, Lung-shan, Shantung, China (gift).

CHAIT, RALPH, New York: 2 bronze halberd butts, with light "water patina," third century B.C. (gift).

COMMONS, GEORGE, Oak Park, Illinois: 1 skeleton from gravel mound—near Algonquin, Illinois (gift).

CORWIN, MRS. CHARLES ABEL, Chicago: 1 Japanese silk wedding robe—Japan (gift).

DART, MISS HELEN M., Chicago: 1 Bundu mask—West Africa (gift).

DONNELLEY, THOMAS E., Chicago: 11 pieces of bronze and 33 of wooden movable type from Korea, thought to date from middle of fifteenth century A.D. (each type represents a Chinese character)—Seoul, Korea (gift).

DONNELLEY, THORNE, Chicago: 3 drums—Negroes, Haiti (gift).

FIELD, DR. HENRY, Chicago: 3 glass and 4 pottery lachrymatories and 3 glass bracelets—Ostia, near Rome, Italy: 2

Parthian stamp seals and 1 Sasanid stamp seal—Balad Sinjar, Iraq; 31 Roman antiquities—Rome and England; 26 Near East ethnological specimens, and 11 prehistoric animal bones—Saccopastore, near Rome, Italy; 3 skulls—Karbala, Iraq (gift).

FIELD MUSEUM OF NATURAL HISTORY:

Collected by Dr. Paul S. Martin (Field Museum Archaeological Expedition to the Southwest): approximately 350 specimens consisting of bone and stone tools, potsherds and whole or mendable pieces of pottery, and skeletal material.

Purchases: 177 flints—England; 41 pieces of black pottery, probably prehistoric—Liang-chu, near Hangchow, Chekiang Province, China; lacquered wooden grille, presumably inside cover of a coffin, about fourth century B.C.; 2 Chinese Shang dynasty bronze weapons—China; 26 casts of human remains from prehistoric sites—England; 1 Chinese bronze tomb fixture—Peiping, China; 25 objects of clothing, school-books, etc., and toys of two Chinese school children—Tung hsien, near Peiping, China; 1 prehistoric jar, 23 pieces of peasant embroidery, 10 shadow-play figures—Szechwan province, China.

FISHER, ANNE, ESTATE OF, Millbrook, Dutchess County, New York: 138 negatives and prints: 88 negatives, 85 prints, and 15 enlarged prints of scenes in Iraq (gift).

GAYTON, LORAN D., Chicago: 2 skulls and 1 femur—Chicago (gift).

HAMBLETON, C. J., Chicago: 1 Tibetan prayer wheel of silver, inlaid with turquoise and coral—Tibet (gift).

HARBAUGH, CHARLES B., JR., Chicago: 1 pair of Sioux sandals—United States; 1 hippopotamus tusk and 1 small knife with wooden handle—Congo region, Africa (gift).

JOSEPH, ARTHUR W., Chicago: 1 Plains Indian cradle hood—Dakota Sioux (gift).

LAMBERT, DR. S. M., Utica, New York: 265 ethnological specimens—New Guinea and Pacific Islands (gift).

LUDLOW, MRS. A. I., ESTATE OF, Cleveland, Ohio: 110 Korean charms, 1

complete key charm, and 1 policeman's club—Seoul, Korea (gift).

MANDEMENT, J., Ussat-les-Bains, Ariège, France: 6 archaeological objects—France (gift).

MARSTON, ALVAN T., London, England: 16 flint implements, and 1 molar tooth of an elephant—Barnfield Pit, Swanscombe, Kent, England (gift).

NESBITT, DR. PAUL H., Beloit, Wisconsin: 27 Mogollon sherds representing various kinds of pottery, 5 pieces of whole pottery, and 2 stone hoes—Reserve, New Mexico (exchange).

PEABODY, MISS S. W., Chicago: 2 silver repoussé bowls, 3 lacquer boxes,

1 specimen of old money—Laos, Siam (gift).

PEI, DR. W. C., Peiping, China: 2 plaster busts of restoration of *Sinanthropus pekinensis* by Lucille Swan, 1 set of colored plaster casts of teeth, and 115 artifacts and casts of implements from Choukoutien—China (gift).

TOWN, WILLIAM J., Detroit, Michigan: 1 skull—near Dearborn, Michigan (gift).

WATKINS, FRANK, Chicago: 1 complete suit of Japanese armor composed of 14 separate parts—Japan (gift).

WILSON, SAMUEL E., Chicago: 4 Chinese bronze mace heads, one with iron handle—China (exchange).

DEPARTMENT OF BOTANY—ACCESSIONS

ACADEMY OF NATURAL SCIENCES, Philadelphia, Pennsylvania: 445 specimens of United States plants, 10 specimens of diatoms (exchange).

ACKLEY, DR. ALMA B., Detroit, Michigan: 1 algal specimen (gift).

AELLEN, DR. PAUL, Basel, Switzerland: 36 specimens of European plants (exchange).

AGRICULTURAL AND MECHANICAL COLLEGE, Monticello, Arkansas: 628 plant specimens (gift); 142 plant specimens (exchange).

AGUILAR G., JOSÉ IGNACIO, Guatemala City, Guatemala: 767 specimens of Guatemalan plants (gift).

ANDERSON, DR. EDGAR, St. Louis, Missouri: 1 plant specimen (gift).

APOLINAR-MARÍA, REV. BROTHER, Bogotá, Colombia: 204 specimens of Colombian plants (gift).

ARNOLD ARBORETUM, Jamaica Plain, Massachusetts: 1,446 specimens of Chinese plants (exchange).

ARTAMONOFF, MRS. GEORGE, Chicago: 150 specimens of Mexican and Central American plants (gift).

BADER, MISS JOAN, Toms River, New Jersey: 2 algal specimens (gift).

BARKLEY, DR. FRED A., Missoula, Montana: 4 specimens of algae (gift).

BARROS, DR. MANUEL, Buenos Aires, Argentina: 59 specimens of plants from Argentina (exchange).

BAUER, BILL, Webster Groves, Missouri: 465 specimens of Missouri plants (gift).

BAUSOR, DR. S. C., Bethlehem, Pennsylvania: 6 specimens of algae (gift).

BENKE, HERMANN C., Chicago: 269 specimens of United States plants (gift).

BOLD, DR. HAROLD C., Nashville, Tennessee: 257 specimens of algae (gift).

BOTANIC GARDENS, Melbourne, Australia: 50 specimens of Australian plants (exchange).

BOTANICAL MUSEUM, HARVARD UNIVERSITY, Cambridge, Massachusetts: 161 specimens of Philippine plants (gift).

BOWDEN, WRAY M., Boyce, Virginia: 2 plant specimens (gift).

BRACELIN, MRS. H. P., Berkeley, California: 91 plant specimens (gift).

BROWN, MISS MARJORIE, Bennington, Vermont: 135 specimens of Panama plants (gift).

BUTLER, MRS. GEORGE A., ESTATE OF, Chicago: 256 cryptogamic specimens (gift).

CALDERON, DR. SALVADOR, San Salvador, El Salvador: 1 plant specimen (gift).

CALIFORNIA ACADEMY OF SCIENCES, San Francisco, California: 188 specimens of California plants (exchange).

CARLE, ERWIN W., Pomona, California: 17 wood specimens (exchange).

CARNEGIE INSTITUTION OF WASHINGTON, Desert Laboratory, Tucson, Arizona: 64 specimens of plants from Lower California (exchange).

CARNEGIE INSTITUTION OF WASHINGTON, Division of Plant Biology, Stanford University, California: 5 photographic prints (exchange).

CARNEGIE MUSEUM, Pittsburgh, Pennsylvania: 480 specimens of Pennsylvania plants (exchange).

CATHOLIC UNIVERSITY OF AMERICA, Washington, D.C.: 380 specimens of American plants (exchange).

CENTRO NACIONAL DE AGRICULTURA, San Pedro Montes de Oca, Costa Rica: 180 specimens of Costa Rican plants (gift).

CLARKSON, MRS. RALPH, Chicago: 1 plant specimen (gift).

CLEMENS, MRS. MARY S., Lae, Morobe, New Guinea: 14 specimens of New Guinea plants (gift).

CLOKEY, IRA W., South Pasadena, California: 15 plant specimens (gift).

CONSERVATOIRE ET JARDIN BOTANIQUE, Geneva, Switzerland: 2,700 specimens of plants from tropical America (exchange).

CORNELL UNIVERSITY, Department of Botany, Ithaca, New York: 129 plant specimens (exchange).

CORRELL, DONOVAN S., Cambridge, Massachusetts: 76 specimens of United States plants (gift).

CROASDALE, DR. HANNAH C., Hanover, New Hampshire: 1 algal specimen (gift).

CUTLER, HUGH C., St. Louis, Missouri: 19 plant specimens (gift).

DAILY, WILLIAM A., Indianapolis, Indiana: 188 specimens of algae (gift).

DAMANN, K., Evanston, Illinois: 5 specimens of algae (gift).

DANIEL, REV. BROTHER H., Medellín, Colombia: 80 specimens of Colombian plants (gift).

DASTON, JOSEPH S., Chicago: 3 plant specimens (gift).

DEAM, CHARLES C., Bluffton, Indiana: 6 plant specimens (gift).

DEPARTMENT OF AGRICULTURE, Central Experimental Farm, Ottawa, Canada: 244 specimens of Canadian plants (exchange).

DIRECCION GENERAL DE TIERRAS DEL MINISTERIO DE AGRICULTURA, Herbario Forestal de la Sección Técnica de Bosques, Buenos Aires, Argentina: 1 plant specimen (gift).

DIRECCION TÉCNICA, Ministerio de Agricultura y Cría, Caracas, Venezuela:

978 specimens of Venezuelan plants (gift).

DRURY, NEWTON B., Berkeley, California: 3 photographic prints (gift).

DURHAM, OREN C., Chicago: 1 plant specimen (gift).

DYER, R. A., Pretoria, South Africa: 1 specimen of palm fruits (gift).

ELIAS, REV. BROTHER, Caracas, Venezuela: 58 specimens of Venezuelan plants (gift).

ELLIS, MISS CHARLOTTE C., Mancos, Colorado: 109 specimens of Colorado plants (gift).

EVANS, DR. HERBERT M., Berkeley, California: 1,650 plant specimens (gift).

FAIRCHILD, DR. DAVID, Coconut Grove, Florida: 2 plant specimens (gift).

FIELD, DR. HENRY, Chicago: 2 specimens of vegetable extracts, 42 specimens of algae (gift).

FIELD MUSEUM OF NATURAL HISTORY:
Collected by Donald Richards and Dr. Francis Drouet: 205 specimens of algae.

Collected by John R. Millar: 20 specimens of Colorado plants; (Sewell L. Avery Expedition to Nova Scotia, 1938): 87 specimens of algae.

Collected by Karl P. Schmidt (Magellanic Expedition of Field Museum): 82 specimens of Peruvian plants.

Collected by Paul C. Standley (Sewell L. Avery Expedition of Field Museum, 1938-39): approximately 30,000 specimens of Guatemalan plants.

Collected by Paul C. Standley and Dr. Julian A. Steyermark: 25 specimens of Indiana and Michigan plants.

Collected by Dr. Julian A. Steyermark: 5,107 specimens of Missouri plants.

Collected by G. T. Velasquez, Donald Richards, and Dr. Francis Drouet: 45 specimens of algae.

Collected by Leon L. Walters (Field Museum Florida Expedition, 1939): 6 specimens of marine algae.

Collected by Llewelyn Williams: 1,780 specimens of Venezuelan plants, 242 wood specimens, 7 economic specimens.

Made by J. Francis Macbride: 4,021 photographic negatives of type specimens of plants.

Transferred from the Division of Photography: 2,474 photographic prints.

Purchases: 2,179 cryptogamic specimens; 163 plant specimens—British Guiana; 945 plant specimens—Costa Rica; 309 plant specimens—Ecuador; 517 plant specimens—Mexico; 136 plant specimens—Panama; 388 plant specimens—Peru; 337 plant specimens—South America.

FISHER, GEORGE L., Houston, Texas: 165 plant specimens (gift).

FLORISTS' PUBLISHING COMPANY, Chicago: 3 plant specimens (gift).

FOSBERG, DR. F. RAYMOND, Philadelphia, Pennsylvania: 45 specimens of Hawaiian plants, 5 algal specimens (gift); 575 specimens of mosses and algae (exchange).

FRANZEN, A. J., Chicago: 7 plant specimens (gift).

GAGNEPAIN, DR. FRANÇOIS, Paris, France: 1 plant specimen (gift).

GARFIELD PARK CONSERVATORY, Chicago: 37 specimens of cultivated plants (gift).

GARRETT, PROFESSOR ARTHUR O., Salt Lake City, Utah: 140 specimens of Utah plants (gift).

GENTRY, HOWARD SCOTT, Tucson, Arizona: 21 plant specimens (gift).

GIFFORD, JOHN C., Miami, Florida: 1 plant specimen (gift).

GILES, GEORGE H., Wilsonville, Nebraska: 1 algal specimen (gift); 35 specimens of algae (exchange).

GRAY HERBARIUM, Cambridge, Massachusetts: 100 plant specimens (exchange).

GRONEMANN, CARL F., Elgin, Illinois: 1 specimen of fungus (gift).

GUARRERA, S. A., Buenos Aires, Argentina: 11 specimens of algae (gift).

HALE, MISS EDNA KATE, Hot Springs, Arkansas: 33 specimens of Arkansas plants (gift).

HARRISON, PROFESSOR B. F., Provo, Utah: 16 plant specimens (gift).

HATCH, PROFESSOR WINSLOW R., Hanover, New Hampshire: 135 specimens of Costa Rican plants (gift).

HEATH, CHARLES A., Chicago: 5 economic specimens (gift).

HERMANN, DR. F. J., Washington, D.C.: 98 specimens of plants from eastern United States (exchange).

HERRERA, DR. A. L., Mexico City, Mexico: 1 plant specimen (gift).

HEWETSON, WILLIAM T., Freeport, Illinois: 1 plant specimen (gift).

HINCKLEY, L. C., Austin, Texas: 27 plant specimens (gift).

HOOGSTRAAL, HARRY, Chicago: 653 specimens of Mexican plants (gift).

ILLINOIS STATE MUSEUM, Springfield, Illinois: 350 specimens of Illinois plants (gift).

INMAN, DR. ONDESS L., Yellow Springs, Ohio: 10 specimens of algae (gift).

INSTITUTO MIGUEL LILLO, Tucumán, Argentina: 4 plant specimens (gift).

INTERNATIONAL HARVESTER COMPANY, Chicago: 1 plant specimen (gift).

JARDIM BOTANICO, Rio de Janeiro, Brazil: 26 specimens of Brazilian plants (gift).

JARDIM BOTANICO DE BELO HORIZONTE, Minas Geraes, Brazil: 1,772 specimens of Brazilian plants (gift).

JENNINGS, JOHN W., Eureka Springs, Arkansas: 1 plant specimen (gift).

JOHNSON, S. C., AND SON, INC., Racine, Wisconsin: 2 specimens of vegetable waxes (gift).

JOHNSTON, DR. JOHN R., Chimaltenango, Guatemala: 80 specimens of Guatemalan plants (gift).

JOLIET PARK CONSERVATORY, Joliet, Illinois: 11 specimens of cultivated plants (gift).

KANSAS STATE COLLEGE OF AGRICULTURE, Manhattan, Kansas: 22 plant specimens (gift).

KENOYER, PROFESSOR LESLIE A., Kalamazoo, Michigan: 620 specimens of Mexican plants (gift).

KNOBLOCH, IRVING W., San Juanito, Chihuahua, Mexico: 54 specimens of Mexican plants (gift).

KRUKOFF, BORIS A., New York: 36 plant specimens (gift).

LEAL, PROFESSOR ADRIÁN RUIZ, Mendoza, Argentina: 3 plant specimens (gift).

LEES, ARTHUR S., Oak Lawn, Illinois: 1 plant specimen (gift).

LESUEUR, HARDE, Austin, Texas: 600 specimens of Mexican plants (gift).

LEWIS, MRS. B. B., Guatemala City, Guatemala: 19 plant specimens (gift).

LOS ANGELES MUSEUM OF HISTORY, SCIENCE AND ART, Department of Botany, Los Angeles, California: 333 specimens of plants from California and Mexico (exchange).

MCCART, WILLIAM L., Denton, Texas: 104 specimens of Texas plants (gift).

MCINTEER, DR. B. B., Lexington, Kentucky: 11 specimens of algae (gift).

MARSHALL COLLEGE, Department of Botany, Huntington, West Virginia: 100 specimens of West Virginia plants (exchange).

MARTÍNEZ, PROFESSOR MAXIMINO, Mexico City, Mexico: 5 plant specimens (gift).

MEYER, PROFESSOR TEODORO, Fontana, Chaco, Argentina: 14 plant specimens (exchange).

MILLE, REV. LUIS, Manabí, Ecuador: 4 plant specimens (gift).

MILLS, MISS NELLIE, East Chicago, Illinois: 1 plant specimen (gift).

MISSOURI BOTANICAL GARDEN, St. Louis, Missouri: 643 specimens of Panama plants (exchange).

MONTANA STATE UNIVERSITY, Department of Botany, Missoula, Montana: 88 plant specimens (gift); 100 plant specimens (exchange).

MONTEIRO DA COSTA, R. C., Pará, Brazil: 1 wood specimen, 12 economic specimens (gift).

MOORE, GEORGE, Lebanon, Missouri: 68 specimens of Missouri plants (gift).

MUSEO ARGENTINO DE CIENCIAS NATURALES, Buenos Aires, Argentina: 162 specimens of South American plants (exchange).

MUSEO DE HISTORIA NATURAL, Montevideo, Uruguay: 301 specimens of Uruguayan plants (exchange).

MUSEO DEL INSTITUTO DE LA SALLE, Bogotá, Colombia: 131 specimens of Colombian plants (gift).

MUSEO NACIONAL, San José, Costa Rica: 192 specimens of Costa Rican plants (gift).

MUSEUM NATIONAL D'HISTOIRE NATURELLE (Phanérogamie), Paris, France: 7,082 plant specimens, 8 photographic prints, 10 economic specimens (exchange).

NATURHISTORISKA RIKSMUSEET, Stockholm, Sweden: 279 specimens of plants from Europe and South America, 202 specimens of algae (exchange).

NEW YORK BOTANICAL GARDEN, New York: 1,157 specimens of South American plants, 72 specimens of algae, 22 photographic prints (exchange).

NEW YORK STATE MUSEUM, Albany, New York: 2 plant specimens (gift).

PACHECO, H. MARIANO, Guatemala City, Guatemala: 2 plant specimens, 1 economic specimen (gift).

PALMER, C. MERVIN, Indianapolis, Indiana: 7 specimens of algae (gift).

PATRICK, MISS RUTH, Philadelphia, Pennsylvania: 13 specimens of algae (gift).

PEARSALL, GORDON, River Forest, Illinois: 1,102 specimens of United States plants, 172 cryptogamic specimens (gift).

PÉREZ CABRERA, DR. RICARDO, San José, Costa Rica: 1 publication (exchange).

PETERSEN, L. LIND, Escuintla, Guatemala: 1 mahogany board (gift).

PETERSEN, OSCAR, St. Louis, Missouri: 5 plant specimens (gift).

PONCE, PROFESSOR JOSÉ M., Mexico City, Mexico: 15 plant specimens (gift).

PRESCOTT, DR. G. W., Albion, Michigan: 81 specimens of algae (gift).

REKO, DR. BLAS P., Tacubaya, Mexico: 1 plant specimen (gift).

RICHARDS, DONALD, Chicago: 61 cryptogamic specimens (gift).

ROSENGURTT, PROFESSOR BERNARDO, Montevideo, Uruguay: 20 plant specimens (gift).

ROYAL BOTANIC GARDENS, Kew, Surrey, England: 66 plant specimens from Peru and Mexico (exchange).

RUNYON, ROBERT, Brownsville, Texas: 25 plant specimens (exchange).

RUTLEDGE, MISS ALMA, Baltimore, Maryland: 54 specimens of algae (exchange).

SANDEMAN, CHRISTOPHER, London, England: 2 plant specimens (gift).

SANDS, MRS. H. B., Chicago: 1 plant specimen (gift).

SAVAGE, JOSEPH, Antioch, Illinois: 1 plant specimen (gift).

SCHESTEL, WILLIAM J., Syracuse, New York: 1 plant specimen (gift).

SCHMIDT, KARL P., Homewood, Illinois: 1 plant specimen (gift).

SCHNEIDER, RICHARD A., Kankakee, Illinois: 191 specimens of Mexican plants (gift).

SCOTT, MILTON, Miami, Florida: 86 wood specimens (exchange).

SELLA, EMIL, Chicago: 2 specimens of algae (gift).

SERVIÇO DE BOTANICA E AGRO-
NOMIA, São Paulo, Brazil: 43 specimens
of Brazilian plants (gift).

SHERFF, DR. EARL E., Chicago: 535
plant specimens, 128 photographic
negatives, 48 photographic prints (gift).

SMITH, F. W., Guasave, Sinaloa,
Mexico: 1 plant specimen (gift).

SMITH, DR. F. W. OWEN, Guatalón,
Guatemala: 1 plant specimen (gift).

SMITH, PRESTON, Oberlin, Ohio: 52
specimens of algae (gift).

SOUKUP, PROFESSOR J., Puno, Peru:
229 specimens of Peruvian plants (gift).

STANDLEY, PAUL C., Chicago: 2
plant specimens (gift).

STANTON, E. J., AND SON, INC., Los
Angeles, California: 1 board of mahog-
any (gift).

STEIN, CHARLES, Chicago: 1 plant
specimen (gift).

STEYERMARK, MRS. CORA SHOOP,
Chicago: 146 cryptogamic specimens
(gift).

STEYERMARK, DR. JULIAN A., Chi-
cago: 2 plant specimens, 8 cryptogamic
specimens (gift).

STIFFLER, MRS. CLOYD B., Chicago:
14 cryptogamic specimens (gift).

STONE, MISS JESSIE L., Chicago: 1
plant specimen (gift).

STRICKLAND, J. C., Charlottesville,
Virginia: 184 specimens of algae (ex-
change).

TANDY, GEOFFREY, London, England:
1 algal specimen (gift).

TAYLOR, DR. WILLIAM R., Ann Arbor,
Michigan: 14 specimens of algae (gift).

THOMPSON, H. D., Spokane, Wash-
ington: 1 plant specimen (gift).

TIFFANY, DR. LEWIS H., Evanston,
Illinois: 6 specimens of algae (gift).

TOUGALOO COLLEGE, Department of
Botany, Tougaloo, Mississippi: 3 plant
specimens (gift).

TRESSLER, DR. WILLIS L., Buffalo,
New York: 4 specimens of algae (gift).

UNITED STATES DEPARTMENT OF
AGRICULTURE, Bureau of Plant Indus-
try, Washington, D.C.: 18 plant speci-
mens (gift); 5 plant specimens (ex-
change).

UNITED STATES DEPARTMENT OF
AGRICULTURE, Food and Drug Adminis-

tration, Washington, D.C.: 2 plant
specimens (gift).

UNITED STATES NATIONAL MUSEUM,
Washington, D.C.: 446 plant speci-
mens, 739 typed descriptions of new
species of plants (exchange).

UNIVERSIDAD DE CONCEPCION, Her-
barium, Concepción, Chile: 25 speci-
mens of Chilean plants (exchange).

UNIVERSITY OF CALIFORNIA, Depart-
ment of Botany, Berkeley, California:
180 specimens of California plants (ex-
change).

UNIVERSITY OF CHICAGO, Depart-
ment of Botany, Chicago: 2,145 plant
specimens, 73 wood specimens (gift).

UNIVERSITY OF ILLINOIS, Depart-
ment of Botany, Urbana, Illinois: 1
plant specimen (gift).

UNIVERSITY OF MICHIGAN, University
Herbarium, Ann Arbor, Michigan: 765
plant specimens, 129 specimens of algae
(exchange).

UNIVERSITY OF THE PHILIPPINES,
Department of Botany, Manila, Philip-
pine Islands: 128 specimens of algae
(exchange).

UNIVERSITY OF TEXAS, Department
of Botany, Austin, Texas: 49 specimens
of Texas plants (gift).

UNIVERSITY OF VIRGINIA, Depart-
ment of Botany, Charlottesville, Vir-
ginia: 17 specimens of algae (gift); 288
specimens of algae (exchange).

UNIVERSITY OF WISCONSIN, Depart-
ment of Botany, Madison, Wisconsin:
54 specimens of Wisconsin plants (ex-
change).

VARGAS G., DR. CÉSAR, Cuzco, Peru:
95 specimens of Peruvian plants (gift).

VELASQUEZ, G. T., Ann Arbor, Michi-
gan: 45 specimens of algae (gift).

VORIS, DR. RALPH, Springfield, Mis-
souri: 13 specimens of Missouri plants,
1 wood specimen (gift).

VOTH, DR. PAUL D., Chicago: 7
specimens of algae (gift).

WEED, ALFRED C., Chicago: 8 speci-
mens of Florida plants, 6 cryptogamic
specimens (gift).

WELCH, DR. WINONA H., Greencastle,
Indiana: 46 specimens of bryophytes
(exchange).

WHEELER, GEORGE C., Grand Forks,
North Dakota: 1 algal specimen (gift).

WHEELER, LOUIS C., Columbia, Mis-
souri: 4 plant specimens (gift).

WILSON, PROFESSOR CARL L., Hanover, New Hampshire: 255 specimens of Guatemalan plants (gift).

WITTE MEMORIAL MUSEUM, San Antonio, Texas: 75 plant specimens (gift).

WOLF, REV. BROTHER WOLFGANG, St. Bernard, Alabama: 4 plant specimens (gift).

WOLLE, PHILIP W., Princess Anne, Maryland: 5 specimens of algae (gift).

WOODS, LOREN P., Chicago: 11 plant specimens (gift).

WORTHINGTON, DR. H. C., Oak Forest, Illinois: 1 plant specimen (gift).

WRIGHT, DR. STILLMAN, Logan, Utah: 13 specimens of algae (gift).

YALE UNIVERSITY, School of Forestry, New Haven, Connecticut: 163 specimens of plants from British Honduras (gift).

YUNCKER, PROFESSOR TRUMAN G., Greencastle, Indiana: 2 plant specimens (gift).

ZETEK, JAMES, Balboa, Canal Zone: 35 specimens of Panama plants (gift).

ZIESENHENNE, RUDOLF C., Santa Barbara, California: 2 plant specimens (gift).

DEPARTMENT OF GEOLOGY—ACCESSIONS

ACKERMAN, CHARLES N., Antioch, Illinois: vertebra and bones of fore and hind legs and feet of *Cervalces*—Grass Lake, Illinois (gift).

ADAMS, R. J., Chicago: 4 specimens of chalk—near Council Groves, Kansas (gift).

AMERICAN MUSEUM OF NATURAL HISTORY, New York: cast of skull and jaw of *Aleurodon* (exchange).

ARTAMONOFF, MR. AND MRS. GEORGE, Chicago: 1 specimen of sand—Cristobal, Canal Zone; 17 specimens of volcanic products—Guatemala and El Salvador (gift).

BACHELOR, CLARENCE, Chicago: 1 fossil coral—Charlevoix, Michigan (gift).

BARNES, VIRGIL E., Austin, Texas: 2 tektites—Texas (exchange).

BENKE, HERMANN C., Chicago: 1 quartz crystal—Dubuque, Iowa; 3 specimens of dolomite—Ontario, Canada (gift).

BEST, NOLAN R., Chicago: 1 box of thermoluminescent adularia sand—North Carolina; 2 specimens of nepheline—Ontario, Canada (gift).

BLOMSTRAN, W. A., Lyon Mountain, New York: 1 specimen of byssolite—Lyon Mountain, New York (gift).

BUTLER, R. D., Bethlehem, Pennsylvania: 3 mineral specimens—Pennsylvania (gift).

BYRLAND, GEORGE, Marion, Iowa: 1 hollow hematite concretion—Lane County, Iowa (gift).

CARTER, A. D., East Los Angeles, California: 26 mineral specimens—Los Angeles County, California (gift).

CHANGNON, HARRY, Chicago: 10 invertebrate fossils—various localities (gift).

COLVIN, MRS. JOHN, Chicago: 1 specimen of jasper and hematite, 8 glacial boulders—Wisconsin (gift).

COMPANIA MINERA DE CAILLOMA, Arequipa, Peru: 5 specimens of silver ore—Cailloma Mine, Batras, Arequipa, Peru (gift).

COURTHOPE, T. E., Retsof, New York: 1 specimen of halite—Detroit, Michigan (gift).

DEFORREST, FRANK, Evergreen Park, Illinois: dolphin skull with one jaw—near Fort Myers, Florida (gift).

DEMUTH, GEORGE W., Chicago: 187 mineral specimens, 1 dalmanites specimen—various localities (gift).

ELDRIDGE, DON, Chicago: 5 invertebrate fossils—Wisconsin (gift).

ELSINGA, HENRY, Lead Hill, Arkansas: 5 specimens of rock and ores—Lead Hill, Arkansas (gift).

FIELD, DR. HENRY, Chicago: collection of minerals and fossils—Europe and Asia (gift).

FIELD MUSEUM OF NATURAL HISTORY: Transferred from Department of Anthropology: 1 quartz crystal—locality unknown.

Collected by Henry Herpers: 1 slab of orbicular diorite (?) and 4 invertebrate fossils—Wisconsin.

Collected by Bryant Mather: 224 minerals and rock specimens, 28 invertebrate fossils—various localities.

Collected by Paul O. McGrew (Field Museum Paleontological Expedition to

South Dakota): 13 skulls and 600 bones of Pliocene mammals.

Collected by Bryan Patterson and James H. Quinn (Field Museum Paleontological Expedition to Western Colorado): 128 specimens of fossil vertebrates—Colorado.

Collected by Dr. Fritz Haas (Field Museum Expedition to Florida, 1939): 4 specimens of coquina and shell—Sanibel Island, Florida.

Collected by Leon Walters (Field Museum Expedition to Florida, 1939): 18 invertebrate fossils—Florida.

Purchases: 10 meteorite specimens, 2 individual meteorites, 15 moldavites—various localities; muffler of car struck by Benld meteorite; carapace and plastron of fossil turtle—Arkansas; 1 fossil leaf; 15 negatives and prints of Phororhacoid bird bones.

FIELD, STANLEY, Chicago: 5 invertebrate fossils—near Fort Myers, Florida (gift).

FINK, A. F., Chicago: 1 oxyhornblende crystal—locality unknown (exchange).

FRISON, R. E., Tensleep, Wyoming: 8 gastroliths—Big Horn Basin, Wyoming (gift).

GAINES, RICHARD V., Golden, Colorado: 2 chrysoberyl crystals—Golden, Colorado (exchange).

GERINGER BROTHERS, Oak Park, Illinois: 2 specimens of scheelite—Gwynne Mine, California (gift).

GORDON, MISS BERTHA, Porterville, California: 14 mineral specimens, 1 garnet crystal—California; 6 photographs of Death Valley and vicinity (gift).

GRABILL, EDWARD, Chicago: 11 specimens of rocks—Devil's Tower, Wyoming (gift).

GRESKY, BENEDICT, Chicago: 6 specimens of abrasives (gift).

GROESBECK, DR. M. J., Porterville, California: 13 geological specimens—Nevada and Mono Lake, California (gift).

GUERET, EDMOND N., Chicago: 1 specimen of rock—Devil's Tower, Wyoming (gift).

HARRIS, T. F., AND WALTER HOAG, Jidda, Arabia: 2 meteorites, 1 silica glass specimen—Wabar, Rub'al Khali, Arabia (gift).

HERPERS, HENRY, Chicago: 1 specimen of cross banding in sandstone—Coopers Plains, New York (gift).

HOOPER, FRANK C., North Creek, New York: 2 specimens of serendibite—Johnsburg, New York (gift).

HORTON, GRAHAME, Glencullen, Oregon: 1 polished natrolite specimen—Lane County, Oregon (gift).

HOWE, E. G., Puno, Peru: 4 specimens of silver ore—San Antonio de Esquilache Mine, Puno, Peru (gift).

HUBENY, MRS. M. J., Chicago: 1 sardonyx boulder—Oregon (gift).

KNISKERN, MISS KATHERINE S., Johns Hopkins University, Baltimore, Maryland: 4 mineral specimens—New York (gift).

KOELNAU, LUDWIG A., Minneapolis, Minnesota: 1 chatoyant quartz specimen—Cayuna Range, Minnesota (gift).

MARSHALL, BYRON C., Imboden, Arkansas: 5 gypsum crystals—Arkansas (exchange).

MENZEL, WILLIAM, Chicago: 1 specimen of pyrite with chalcocopyrite—San Luis Potosi, Mexico (gift).

MERRILL, CHARLES C., Buhl, Idaho: 1 chalcedony geode—Buhl, Idaho (gift).

MUSEUM OF COMPARATIVE ZOOLOGY, Harvard University, Cambridge, Massachusetts: skull of *Buettinaria perfecta*—New Mexico (exchange).

MYNERS, T. F., Mineville, New York: 2 specimens of martite—Mineville, New York (gift).

NEBRASKA STATE TEACHERS' COLLEGE, Chadron, Nebraska: collection of 120 specimens of vertebrate fossils—Marshland, Nebraska (exchange).

NICHOLS, HENRY W., Chicago: 1 fluorescent opal—Virgin Valley, Nevada (gift).

OKLAHOMA GEOLOGICAL SURVEY, Norman, Oklahoma: 1 etched slice of the Soper meteorite—Soper, Oklahoma (exchange).

PREUCIL, FRANK M., Joliet, Illinois: 6 photographs of a meteorite (gift).

RINEHART, WILLIAM G., Batesville, Arkansas: 8 photographs (gift).

SCHNEIDER, A. J. AND RAY, Portland, Oregon: 8 thunder eggs—Jefferson County, Oregon (gift).

SKELLY, JOHN, Milwaukee, Wisconsin: 7 specimens of silver-lead-copper-nickel ore—Sudbury, Ontario (gift).

SMITH, JAY L., Chester, New York: 1 specimen of chiolite—Greenland (exchange).

SNYDER, MISS ANNE H., Kenosha, Wisconsin: 4 invertebrate fossils—Racine, Wisconsin (gift).

STANDARD OIL COMPANY (Indiana), Chicago: 4 specimens of oil products (gift).

STRUCTURAL SLATE COMPANY, Pen Argyl, Pennsylvania: 2 specimens of fabricated slate—Pen Argyl, Pennsylvania (gift).

SULLIVAN, FRED, AND JACK PAIGE, Chicago: 2 specimens of chert—Missouri (gift).

SWETT, D. P., Mina, Nevada: 1 specimen of gold-silver-lead-zinc ore—Mina, Nevada (gift).

TAYLOR, HOWELL, Lebanon, Syria: 5 mineral specimens, 3 invertebrate fossils—Syria (gift).

TREVETT, MISS ANN, Casper, Wyoming: 5 specimens of cordierite—Casper, Wyoming (gift).

VANDERPOOL, MISS ADA, Quincy, Illinois: fragment of mastodon tusk—Michigan (gift).

VINTRUP, R. J., Chicago: 8 mineral specimens—Black Hills, South Dakota (gift).

VON DRASEK, FRANK, Cicero, Illinois: 29 minerals—Hot Springs, Arkansas (gift).

WESTERN SPRINGS PARK BOARD, Western Springs, Illinois: various bones of fossil deer and fossil elephant, and one complete skeleton and parts of skeleton of fossil fish—Western Springs, Illinois (gift).

WILSON, BEN HUR, Joliet, Illinois: 1 specimen of saponite—Barstow, California (gift).

WINTERBOTHAM, JOHN, Chicago: 1 specimen of coral sand, 1 fossil fish, 1 specimen of silicified wood—various localities (gift).

WOLF, GLEN C., Chicago: 110 concretions—Broadview, Montana (gift).

WOODS, LOREN P., Evanston, Illinois: 6 mineral specimens—various localities (gift).

WORTH, F. C., Chicago: 2 mineral specimens—Pennsylvania; 1 specimen of ore—Wisconsin (gift).

ZERK, OSCAR U., Kenosha, Wisconsin: 7 polished slices of agate—various localities (gift); 13 polished slices of agate, 1 specimen of fossil wood, 9 moss agates, 2 rainbow agates—various localities (exchange).

ZODAC, PETER, Peekskill, New York: 1 mineral specimen—Nesquehoning, Pennsylvania (gift).

DEPARTMENT OF ZOOLOGY—ACCESSIONS

ANDERSON, SPENCER, Acapulco, Mexico: 7 insects—Mexico (gift).

ANONYMOUS DONOR: 35,076 birds—various localities (gift).

ARTAMONOFF, MRS. GEORGE, Chicago: 1 snake, 11 fishes, 41 insects, 642 other invertebrates—Mexico, Central America and Panama (gift).

BAGOT, FRANK, Miami Beach, Florida: 1 beetle—Florida (gift).

BAKER, PROFESSOR C. L., Memphis, Tennessee: 39 fishes—Reel Foot Lake, Tennessee (gift).

BARBER, CHARLES M., Hot Springs, Arkansas: 1 goat skeleton, 1 mouse, 3 snakes, 3 toads—Arkansas (gift).

BARD, F. N., Highland Park, Illinois: 1 grizzly bear skull—British Columbia (gift).

BARTELL, CARL, Blue Island, Illinois: 1 barn owl—Blue Island, Illinois (gift).

BARTHEMAN, HENRY, Useppa Island, Florida: 1 tarpon—Useppa Island, Florida (gift).

BASS BIOLOGICAL LABORATORY, Englewood, Florida: 98 fishes—Englewood, Florida; 2 sharks—Charleston, South Carolina (gift).

BAUER, MISS MARGARET J., Chicago: 1 toad, 1 moth—Chicago (gift).

BAYLIS, JOHN, Chicago: 5 beetles—Cuernavaca, Mexico (gift).

BEECHER, WILLIAM J., Chicago: 16 small mammal skins and skulls—Knox County, Tennessee; 28 small mammal skins and skulls—Fox Lake, Illinois (gift).

BENKE, HERMANN C., Chicago: 33 marine shells—Atlantic coast (gift).

BLACKMORE, MICHAEL, London, England: 6 bats in alcohol—Berkshire, England (gift).

BOEHME, ROBERT E., Chicago: 1 assassin bug—Chicago (gift).

BOMBAY NATURAL HISTORY SOCIETY, Bombay, India: 1 crocodile skull, 2 young crocodiles in alcohol—Sind, India (exchange).

BOULTON, RUDYERD, Chicago: 1 starling—West Nyack, New York; 1 bird—Chicago (gift).

BOWERS, MRS. MABEL, Chicago: 1 red bat—Chicago (gift).

BOYD, JOHN, Southern Pines, North Carolina: 15 butterflies—Suffolk, Virginia (gift).

BRAGG, ARTHUR N., Norman, Oklahoma: 3 tree frogs, 4 toads—Cleveland County, Oklahoma (gift).

BRIDGERS, MISS R. B., Thomasville, Georgia: 1 tarantula with tube web—Thomasville, Georgia (gift).

BRITISH MUSEUM (NATURAL HISTORY), London, England: 123 small mammal skins and skulls—various localities (exchange).

BROOKS, MAJOR ALLAN, Okanagan Landing, British Columbia: 6 birds—Canada and South Seas (exchange).

BROWNE, J. C., Chicago: 3 beetles—Chicago (gift).

BUCK, WARREN, Camden, New Jersey: 7 fishes—Sierra Leone, Africa (gift).

BUCKLEY, DR. L. C., Trang, Siam: 15 bats—Siam (gift).

BULLOCK, DR. DILLMAN S., Angol, Chile: 38 rodent skins and skulls, 8 birds—Chile (exchange); 24 frogs and toads, 30 lizards, 10 snakes—Chile (gift).

BURTON, ROBERT A., Evanston, Illinois: 1 weasel—Chicago; 12 salamanders, 1 frog, 2 toads—Massachusetts and New Jersey; 10 frogs, 2 toads, 3 snakes—Illinois and Indiana (gift).

CAMRAS, SYDNEY, Chicago: 2 birds—Chicago (gift).

CARNEGIE MUSEUM, Pittsburgh, Pennsylvania: 1 salamander—Cabell County, West Virginia (gift).

CASCARD, BEN, Chicago: 5 birds—Gary, Indiana (gift).

CHARLESTON MUSEUM, Charleston, South Carolina: 11 small fishes—South Carolina (gift).

CHAWORTH-MUSTERS, J. L., London, England: 15 bats in alcohol—Somerset, England (gift).

CHICAGO ZOOLOGICAL SOCIETY, Brookfield, Illinois: 32 mammals, 148 birds, 6 snakes, 2 lizards, 1 alligator, 6 ticks—various localities (gift).

CONOVER, BOARDMAN, Chicago: 6 birds—various localities (exchange); 10 birds—various localities (gift).

CORWIN, MRS. CHARLES A., Chicago: 4 paintings of Laysan Island birds (gift).

DAVIS, W. B., College Station, Texas: 1 skunk skin and skull—Texas (exchange).

DEMAREE, DR. DELZIE, Monticello, Arkansas: 3 snakes—Arkansas (gift).

DODGE, H. R., Columbus, Ohio: 1 beetle—Minnesota (gift).

DOWNES, WILLIAM, Denver, Colorado: 4 beetles—Denver, Colorado (gift).

DUBISCH, R., Oswego, Illinois: 1 snake—Oswego, Illinois (gift).

DYBAS, HENRY, Chicago: 1 scorpion, 3 land shells—Colombia (gift).

EFF, DONALD, Sylvania, Ohio: 1 moth—Sylvania, Ohio (gift).

FABRICUS, WALTER, Chicago: 1 snake—Chicago (gift).

FALCK, EUGENE G. J., Chicago: 2 salamanders, 12 toads, 165 frogs, 12 snakes, 3 lizards, 7 turtles, 815 freshwater mollusks, 57 crayfish, 19 insects—Missouri; 13 crayfish, 135 mollusks—Lake County, Illinois (gift).

FIELD, DR. HENRY, Chicago: 4 shells—Philippine Islands; 24 bats in alcohol, 60 fishes, 151 insects and allies, 441 mollusks—Iraq; 86 fishes, 43 crabs, 100 shells, 1 sponge—York Harbor, Maine (gift).

FIELD, DR. HENRY AND JOHN LINDSAY, Chicago: 17 insects—Southborough, England (gift).

FIELD MUSEUM OF NATURAL HISTORY:

Collected by Emmet R. Blake (Sewall Avery Expedition to British Guiana): 20 small mammal skins and skulls, 3 small mammals and 31 bats in alcohol, 498 bird skins, 2 fledglings in alcohol, 111 frogs and toads, 10 snakes, 39 lizards, 752 fishes, 1 bird spider, 1 scorpion—British Guiana.

Collected by Emmet R. Blake: 15 birds—Illinois.

Collected by Dr. Fritz Haas and Leon L. Walters (Field Museum Expedition to Florida): 14 mammal skins and skulls, 2 lizards, 2 snakes, 15 turtles, 1 eel, 6,001 invertebrates.

Collected by Dr. Wilfred H. Osgood, F. W. Gorham, and W. F. Nichols (Field Museum Expedition to New Mexico): 37 insects and allies—New Mexico and Colorado.

Collected by Bryan Patterson and James H. Quinn (Field Museum Paleontological Expedition to Colorado, 1939):

10 mammal skeletons, 28 bird skeletons, 103 lizards, 2 snakes, 241 invertebrates—Colorado and Utah.

Collected by Colin C. Sanborn (Field Museum Expedition to Scotland): 1 bird—Scotland.

Collected by Colin C. Sanborn, Karl P. Schmidt, and John M. Schmidt (Field Museum Magellanic Expedition): 562 mammal skins and skulls, 22 mammal skeletons, 120 bird skins, 1 bird in alcohol, 4 sets of birds' eggs, 221 mollusks, 33 crayfish, 52 isopods—Peru.

Collected by Karl P. Schmidt (Field Museum Expedition to Arkansas): 109 insects and allies—Arkansas.

Collected by Karl P. Schmidt: 45 tiger salamanders—Chicago.

Collected by Paul C. Standley (Sewell Avery Expedition to Guatemala): 2 beetles—Guatemala.

Purchases: 6 forest hogs—Africa; 98 small rodents, 2 bats—Africa; 18 snakes, 12 lizards, 11 turtles—Arkansas; 35 bird skins—Bolivia (Emily Crane Chadbourne Fund); 1 ring-tailed cat—California; 12 small mammal skins and skulls, 10 frogs, 3 snakes—Czechoslovakia; 419 butterflies and moths—Colombia; 85 frogs and toads, 20 lizards, 5 snakes—Ecuador; 1 whale skeleton—Englewood, Florida; 7 small mammal skins and skulls—Korea; 73 bird skins—Panama; 7 mammal skins and 8 skulls, 60 bats in alcohol, 2 bird skins, 1 fish—Mexico; 1 jack rabbit—Montana; 49 bird skins—Peru; 8 snakes—Texas; 170 salamanders, 35 frogs and toads—various localities; 251 hawks and owls, 2 other bird skins—various localities (Leslie Wheeler Fund).

FIELD, WILLIAM D., Lawrence, Kansas: 2 butterflies—Lawrence, Kansas (gift).

FLEMING, ROBERT L., Mussoorie, India: 1 bat skin and skull—Mussoorie, India (gift).

FONTANA, HUMBERT, Chicago: 1 short-eared owl—Bensenville, Illinois (gift).

FRANZEN, ALBERT J., Chicago: 1 juvenile starling—Chicago (gift).

FRIELAND, MRS. L., Chicago: 1 spider—Chicago (gift).

FRIESSER, JULIUS, Chicago: 4 mammal skulls—Arizona (gift).

GENERAL BIOLOGICAL SUPPLY HOUSE, Chicago: 2 lizards, 9 snakes—Panama;

1 lot leopard frog eggs; 1 giant earthworm—Peru; 12 freshwater snails—Florida (gift).

GERHARD, WILLIAM J., Chicago: 2 scorpions—Nayarit, Mexico (gift).

GRANT, MAJOR CHAPMAN, San Diego, California: 3 Jamaican geckos—Jamaica (gift).

GRANT, GORDON, Los Angeles, California: 19 salamanders, 1 lizard—Los Angeles, California (gift).

GROESBECK, DR. M. J., Porterville, California: 11 flies, 20 fairy shrimps—Mono Lake, California (gift).

GRONEMANN, CARL F., Elgin, Illinois: 8 freshwater shells—Kane County, Illinois (gift).

GUERET, EDMOND N., Chicago: 4 mammal skeletons—New York (gift).

HAGEY, H. H., Madison, Wisconsin: 1 bird—Madison, Wisconsin (gift).

HANSON, HAROLD C., Chicago: 21 small mammal skins and skulls, 2 bird skins—Decorah, Iowa (gift).

HIGGINS, HAROLD, Price, Utah: 4 geckos—Samoa (gift).

HILL, FREDERICK W., Chicago: 2 hummingbird skins—Costa Rica (gift).

HIRSCHBERG, ERWIN, Chicago: 1 beetle—Fremont, Ohio (gift).

HOBGOOD, DR. W. C., Monticello, Arkansas: 3 salamanders, 1 swamp tree frog—Monticello, Arkansas (gift).

HOOGSTRAAL, HARRY, Chicago: 1 fish—Santa Engracia, Mexico (gift).

HOOGSTRAAL, HARRY AND PHILIP STONE, Champaign, Illinois: 1 albino spermophile skin and skull—Champaign County, Illinois (gift).

HUEY, L. M., San Diego, California: 1 ring-tailed cat—San Diego County, California (gift).

INSTITUTO DE LA SALLE, Bogotá, Colombia: 4 rodents, 8 bats—Colombia (gift).

JURICH, MRS. THERESA, Chicago: 2 rock dove eggs (gift).

KAPPEL, JOHN, Chicago: 1 bat bug—Chicago (gift).

KESSEN, G. J., Sanibel Island, Florida: 2 snakes, 10 shells—Sanibel Island, Florida (gift).

KNAACK, MRS. D., Coronado, California: 1 millipede—Catskill Mountains, New York (gift).

KOEHLE, W. A., Chicago: 1 snake—Chicago (gift).

KOERSTEIN, THEODORE, Chicago: 1 tiger salamander—Wisconsin (gift).

KURFESS, JOHN, Hinsdale, Illinois: 1 common shrew—Hinsdale, Illinois; 1 snake—Kelly, Wyoming (gift).

KURFESS, JOHN, AND ROBERT A. BURTON, Hinsdale and Evanston, Illinois: 5 frogs, 1 toad, 5 lizards, 10 snakes, 5 turtles—Will and Grundy Counties, Illinois (gift).

LAMBERT, DONALD, Zion City, Illinois: 2 parasites—Zion City, Illinois (gift).

LARRISSEY, GEORGE A., Chicago: 1 snake—Illinois (gift).

LAYBOURNE, MISS PHYLLIS, Homewood, Illinois: 2 snakes—Michigan (gift).

LENER, MICHAEL, New York: 1 mounted broad-bill swordfish and large photograph of same—Cape Breton, Nova Scotia; 15 kodachrome slides, 1 roll of processed kodachrome film, 22 enlarged photographs, views of Mount Egmont, New Zealand (gift).

LETL, FRANK H., Homewood, Illinois: 1 bird, 1 toad—Homewood, Illinois; 1 juvenile crow—Matteson, Illinois (gift).

LEVY, SEYMOUR, Chicago: 1 bird—Blue Island, Illinois (gift).

LILJEBLAD, EMIL, Chicago: 6 moths—Chicago (gift).

LINCOLN PARK ZOO, Chicago: 1 adult lioness, 1 giant skink, 4 snakes (gift).

LINDAU, EDWARD W., Palatine, Illinois: 1 spider with young—Palatine, Illinois (gift).

LITTLE, JAMES, Naperville, Illinois: 1 salamander, 7 frogs and toads, 8 snakes—Oconto County, Wisconsin (gift).

LIX, H. W., Hot Springs, Arkansas: 1 snake—Hot Springs, Arkansas (gift).

LOEWENSTAMM, H., Chicago: 127 land and freshwater shells—Palestine (gift).

LORIMER, ANDREW, Prestonkirk, East Lothian, Scotland: 1 stoat—Scotland (gift).

MARIA, BROTHER NICEFORO, Bogotá, Colombia: 24 bat skins with skulls, 22 bird skins—Colombia (gift).

MASON, MISS N. B., Davenport, Iowa: 1 garter snake—Davenport, Iowa (gift).

MCELVARE, ROWLAND R., New York: 8 moths, 2 beetles—various localities (gift).

MEINERTZHAGEN, COLONEL RICHARD, London, England: 4 mammals, northern Afghanistan; 14 bird skins—Africa and Asia (gift).

MILLAR, JOHN R., Chicago: 1 bird—Chicago; 2 snakes, 2 turtles—Clay County, Indiana (gift).

MILLE, LUIS, Bahia de Caraquez, Ecuador: 6 sponges and corals—Ecuador (gift).

MOONEY, E. C., Kingsville, Texas: 2 lizards, 2 snakes—Kingsville, Texas (gift).

MURPHY, WALTER P., Lake Bluff, Illinois: 1 albino chipmunk—New Haven, Connecticut (gift).

MUSÉE DE LA PROVINCE, Quebec, Canada: 4 bird skins—Canada (exchange).

MUSEUM OF COMPARATIVE ZOOLOGY, Cambridge, Massachusetts: 24 small mammal skins and skulls—Borneo and Siam; 1 rat skin and skull—French Indo-China; 3 mammal skins and skulls—Florida; 21 mammal skins and skulls, 2 mammals in alcohol, 7 bird skins—various localities (exchange).

NELSON, DR. HAROLD H., Chicago: 63 bats in alcohol—Egypt (gift).

NILES, RAY, Lake Geneva, Wisconsin: 1 large trout skull—Lake Geneva, Wisconsin (gift).

OHIO STATE UNIVERSITY, Columbus, Ohio: 101 fishes—Ohio (exchange).

OSGOOD, DR. WILFRED H., Chicago: 30 mammal skins and skulls, 1 mammal skeleton, 1 bat in alcohol, 2 bird skins—Mississippi and Florida (gift).

OWENS, DAVID W., Flossmoor, Illinois: 2 salamanders, 2 toads, 7 frogs, 1 snake—Standard City, Illinois (gift).

PATTERSON, BRYAN, Chicago: 35 mollusks—Illinois and Indiana (gift).

PATTERSON, MRS. BRYAN, Chicago: 1 hog-nosed snake—Augusta, Illinois (gift).

PHILBY, H. ST. JOHN, Jidda, Arabia: 3 hedgehogs and 12 bats in alcohol, 6 toads, 36 lizards, 7 snakes—Arabia (gift).

PLATH, KARL, Chicago: 1 Guiana parrot—British Guiana (gift).

RASOOL, HABIB, Buxton, British Guiana: 69 bird skins—British Guiana (gift).

RIBNIKER, MARTIN, Chicago: 12 birds—Illinois (gift).

RINKER, G. C., Hamilton, Kansas: 61 small mammal skins and skulls—Kansas (exchange).

RITTSCHOF, FRED, Urbana, Illinois: 1 lizard—Urbana, Illinois (gift).

ROBERTSON, R. R., Chicago: 1 platypus skin (gift).

RUECKERT, ARTHUR G., Chicago: 1 scarlet king snake—Hardy County, Florida (gift).

SANDERS, MRS. RUTH, Dallas, Texas: 2 butterflies—Mexico (gift).

SANDERSON, CLARK, Chicago: 6 sow-bugs—Chicago (gift).

SCHMIDT, JOHN M., Homewood, Illinois: 3 bats in alcohol, 6 scorpions, 7 spiders—Texas and Arkansas; 29 rodent skins and skulls, 3 toads, 13 frogs, 17 lizards, 14 snakes, 2 turtles—South Dakota and Nebraska; 4 garter snakes—Homewood, Illinois; 1 mammal skin and skull, 1 amphibaena—Florida (gift).

SCHMIDT, KARL P., Homewood, Illinois: 19 beetles—Homewood, Illinois (gift).

SCHWAB BROTHERS, Muscatine, Iowa: 7 birds—various localities (gift).

SHEDD AQUARIUM, JOHN G., Chicago: 2 giant salamanders, 1 turtle, 76 fishes—various localities (gift).

SIGISMUND OF PRUSSIA, PRINCESS, Estacion Barranca, Costa Rica: 4 centipedes, 4 insects—Costa Rica (gift).

STACK, PATRICK, York Harbor, Maine: 9 insects—York Harbor, Maine (gift).

STANFORD UNIVERSITY NATURAL HISTORY MUSEUM, Stanford University, California: 2 rodent skins and skulls—Galapagos Islands (exchange).

STEYERMARK, DR. JULIAN A., Chicago: 1 mole, 1 bird, 1 frog, 5 snakes—Missouri (gift).

STROECKER, DR. H. F., Gambier, Ohio: 12 beetles—various localities (gift).

TAYLOR, DR. EDWARD H., Lawrence, Kansas: 1,563 lizards—Mexico (exchange).

TEXAS CO-OPERATIVE WILD LIFE RESEARCH UNIT, College Station, Texas: 1 salamander, 1 snake, 1 turtle—Texas (exchange).

TOBIASZ, EDWARD C., Chicago: 1 tree frog, 1 millipede, 1 bug—Illinois and Indiana (gift).

TURNER, DR. C. L., Evanston, Illinois: 87 tadpoles—Panama (gift).

UNIVERSITY OF MICHIGAN MUSEUM OF ZOOLOGY, Ann Arbor, Michigan: 4 frogs, 8 lizards—Guatemala and Australia (exchange).

VATTER, ALBERT, Glenview, Illinois: 1 wasp nest—Deerfield, Illinois (gift).

VON DER HEYDT, JAMES A., AND BOB ALLEN, Oak Park, Illinois: 33 frogs and toads—Hayward, Wisconsin (gift).

WALTON, MRS. CLARA, Highland Park, Illinois: 1 bird—Highland Park, Illinois (gift).

WARNER, BRYCE, Chicago: 1 bird—Chicago (gift).

WEED, ALFRED C., Chicago: 1 mouse skin and skeleton, 1 frog, 2 snakes, 2,062 fishes, 18 insects and allies, 215 crustaceans—Englewood, Florida; 1 tick, 1 butterfly—Chicago (gift).

WELD, DR. LEWIS H., East Falls Church, Virginia: 34 insects—Turkey and the United States (gift).

WENZEL, RUPERT L., Chicago: 21 beetles—various localities (gift).

WERLER, JOHN, Seaside, Oregon: 9 garter snakes—Seaside, Oregon (gift).

WHITE, MRS. ROBB, Thomasville, Georgia: 3 salamanders, 11 snakes, 12 insects and allies—Thomasville, Georgia (gift).

WILSON, MRS. GRACE N., Chicago: 1 beetle—Chicago (gift).

WOLCOTT, ALBERT B., Downers Grove, Illinois: 20 insects—Illinois (gift).

WONDER, FRANK C., Chicago: 1 dogfish—Lake County, Illinois (gift).

WOODCOCK, H. E., Chicago: 64 butterflies and moths—various localities (gift).

WOODS, LOREN P., Evanston, Illinois: 2 bats in alcohol, 6 tadpoles, 1 frog, 5 lizards, 4 snakes, 1 turtle, 7,484 fishes, 6 dragonfly nymphs, 12 crayfish—Missouri; 1,001 fishes, 202 lower invertebrates—Union County, South Carolina; 875 fishes—Puget Sound, Washington; 12 small mammals in alcohol, 1 human fetus, 10 embryonic chicks in formalin, 1 snake, 1 snapping turtle, 1 fish, 18 insects, 1,177 lower invertebrates—various localities (gift).

ZBYLSKI, JOSEPH, Chicago: 1 young fox squirrel—Illinois (gift).

RAYMOND FOUNDATION—ACCESSIONS

CHICAGO SLIDE COMPANY: 1 black and white slide of a Huon Gulf coconut shell cup (exchange).

FIELD, DR. HENRY: 5 large colored transparencies: Egypt (gift).

FIELD MUSEUM OF NATURAL HISTORY: From Division of Photography: 1,513 lantern slides.

MILLAR, JOHN R.: 15 colored slides on "Preparation of Exhibits" (gift).

DIVISION OF PHOTOGRAPHY—ACCESSIONS

FIELD MUSEUM OF NATURAL HISTORY:

Made by Division of Photography: 5,915 prints, 1,448 negatives, 1,625 lantern slides, 101 enlargements, 12 large transparencies, 20 transparent labels, and 18 rolls of film developed.

Made by Bryan Patterson: 63 negatives of general views in Colorado.

FISHER, MRS. ANN, ESTATE OF, Millbrook, New York: 38 negatives of racial types and general views in Iraq (gift).

PARKER, R. B., Megiddo, Palestine: 700 portrait negatives of natives of Palestine (gift).

PEARSON, HAROLD E., Chicago: 21 negatives of general views in Colorado (gift).

LIBRARY—ACCESSIONS

List of Donors of Books

INSTITUTIONS

Adult Education Council, Chicago.
Americana Corporation, New York.

Biblioteca Publica, Toluca, Mexico.
British Guiana Museum, Georgetown,
British Guiana.

Carnegie Institution, Washington, D.C.
Chesapeake Biological Laboratory,
Solomon's Island, Maryland.
Chicago Park District, Chicago.
Chicago Recreation Commission,
Chicago.

Chicago Recreation Survey, Chicago.
Ciba Symposia, Summit, New Jersey.
Colorado Museum, Boulder, Colorado.
Columbia Broadcasting System,
Chicago.
Cooper Union for the Advancement of
Science and Art, New York.
Crerar Library, John, Chicago.

Denoyer-Geppert Company, Chicago.
Department of Conservation, Nashville,
Tennessee.

Geffrye Museum, London, England.
General Biological Supply House,
Chicago.

Geographical and Historical Society,
Guatemala City, Guatemala.
Glycerine Producers Association,
Chicago.

Golden Gate International Exposition,
San Francisco, California.
Guatemala Ministry of Foreign Affairs,
Guatemala City, Guatemala.

Hallwyloka Museet, Stockholm, Sweden.

Imprimerie Mission Catholique, Bel-
gian Congo, Africa.
Institut Français de l'Afrique Noire,
Dakar, Senegal.
Institute for Research, Chicago.
Instituto Cubano de Estabilizacion del
Café, Habana, Cuba.

Japanese Red Cross Society, Tokyo,
Japan.
Josselyn Botanical Society, Orono,
Maine.

Lakeside Press Galleries, Chicago.
Luton Museum, Luton, England.

Ministerio de Fomento Estacion Ex-
perimental Agrícola, Lima, Peru.
Missouri Resources Museum, Jefferson
City, Missouri.

Missouri Valley Fauna, Lincoln, Ne-
braska.

Musée Ethnographique (Etnografski
Museum), Zagreb, Yugoslavia.
Museum van Natuurlijke Historie, Rot-
terdam, Netherlands.

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- National Association of Manufacturers, New York.
 New York Horticultural Society, New York.
 New York World's Fair—Portugal World's Fair Committee, New York.
 Page and Company, L. C., Boston, Massachusetts.
 Pan-American Society of Tropical Research, New Orleans, Louisiana.
Parks and Recreation, Rockford, Illinois.
 Quarrie Corporation, Chicago.
 Queen Victoria Museum and Art Gallery, Launceston, Australia.
 Save the Redwoods League, Berkeley, California.
 Service News Recreation, Chicago.
 South Africa—Department of Native Affairs, Pretoria, Union of South Africa.
 Staatliche Museum, Berlin, Germany.
 Stechert and Company, G. E., New York.
 Superintendent of Public Instruction, Springfield, Illinois.
 Swift and Company, Chicago.
 Texas Memorial Museum, Austin, Texas.
 Tokyo Negyo Daigaku (Tokyo Agricultural University), Tokyo, Japan.
 United Brewers Industrial Foundation, New York.
 United States Department of Interior, Bureau of Mines, Washington, D.C.
United States Steel News, Pittsburgh, Pennsylvania.
 West Australian Naturalist's Club, Perth, Australia.
 Westinghouse Electric Manufacturing Company, Pittsburgh, Pennsylvania.
 Works Progress Administration, Federal Projects, Chicago.

INDIVIDUALS

- Abbott, Dr. C. E., Searcy, Arkansas.
 Aldis, Graham, Chicago.
 Backer, C. A., Heemstede, Netherlands.
 Bahr, A. V., Surrey, England.
 Ball, Stanley C., New Haven, Connecticut.
 Bascom, William R., Evanston, Illinois.
 Bassett, Professor Norman C., Madison, Wisconsin.
 Benke, H. C., Chicago.
 Blair, W. Frank, Ann Arbor, Michigan.
 Bordas, Alejandro F., Buenos Aires, Argentina.
 Bourret, René, Hanoi, Tonkin.
 Brady, Professor Thomas A., Columbia, Missouri.
 Brammanis, I., Riga, Latvia.
 Brooks, Maurice G., Morgantown, West Virginia.
 Bucher, Walter H., Cincinnati, Ohio.
 Cabot, Thomas D., Boston, Massachusetts.
 Caso, Dr. Alfonso, Mexico City, Mexico.
 Clay, William M., Louisville, Kentucky.
 Coleman, Edith.
 Cooley, R. A., Hamilton, Ontario, Canada.
 Cornell, Miss Margaret M., Chicago.
 Dallwig, Paul G., Chicago.
 Davis, D. Dwight, Chicago.
 Devincenzi, Garibaldi J., Montevideo, Uruguay.
 Dieseldorff, Erwin P., Guatemala City, Guatemala.
 Emberger, Louis, Montpellier, France.
 Emerson, Dr. Alfred E., Chicago.
 Ennis, Miss Margaret, Chicago.
 Fairchild, Dr. Herman L., Rochester, New York.
 Field, Dr. Henry, Chicago.
 Field, Stanley, Lake Forest, Illinois.
 Fort Hunter Museum, Harrisburg, Pennsylvania.
 Fosberg, F. R., Philadelphia, Pennsylvania.
 Garkowski, Mathias, Chicago.
 Gaskin, L. J. P., London, England.
 Gerhard, Peter, Winnetka, Illinois.
 Gerhard, W. J., Chicago.
 Gregg, Clifford C., Flossmoor, Illinois.
 Haas, Dr. Fritz, Chicago.

- Hack, John T., Cambridge, Massachusetts.
Hambly, Dr. Wilfrid D., Chicago.
Hermanson, Miss Helen, Chicago.
Herrera, Dr. Fortunato L., Lima, Peru.
Hicks, Lawrence E., Columbus, Ohio.
Hungerford, Dr. H. B., Lawrence, Kansas.

Ikéuchi, Professor H., Tokyo, Japan.
Isely, P. B., Waxahachie, Texas.

Johnson, E. R. Fenimore, Camden, New York.

Kelso, L., Washington, D.C.
Keyes, Charles R., Mount Vernon, Iowa.
Krogman, Wilton M., Cleveland, Ohio.

Lagercrantz, S., Stockholm, Sweden.
Leason, P. A., Victoria, Australia.
Leussler, R. A., Omaha, Nebraska.
Lewis, Dr. Albert B., Chicago.
Lion, Mme. L., Paris, France.
Loo, C. T., New York.
Lundell, C. L., Ann Arbor, Michigan.

Macbride, J. Francis, Chicago.
McConnell, Burt M., New York.
McMahon, William E., Fort Worth, Texas.
Martin, Dr. Paul S., Chicago.
Mather, Bryant, Chicago.
May, Louis Philippe, Paris, France.
Moldenke, Harold N., New York.
Morley, Dr. Sylvanus G., Washington, D.C.
Moyer, John W., Chicago.
Murray-Aaron, Dr. Eugene, Chicago.

Nichols, Henry W., Chicago.

Olalla, A. M., São Paulo, Brazil.
Omer-Cooper, Joseph, Grahamstown, Cape Colony, South Africa.
Osgood, Dr. Wilfred H., Chicago.
Overbeck, H.

Parsons, C., Chicago.
Pérez Cabrera, Dr. Ricardo, San José, Costa Rica.
Phelps, William H.
Porsild, A. N., Ottawa, Canada.
Poulter, Thomas C., Chicago.

Rehder, Alfred, Jamaica Plains, Massachusetts.
Riggs, Elmer S., Chicago.
Royo, Dr. Fernando, Santa Clara, Cuba.
Ruiz Leal, A., Mendoza, Argentina.
Ryan, Sister Mary Hilaire, River Forest, Illinois.

Sanborn, Colin Campbell, Chicago.
Sanderson, Milton W., Fayetteville, Arkansas.
Sarkar, Dr. Benoy Kumar, Calcutta, India.
Schmidt, Karl P., Chicago.
Schoute, Professor J. C., Groningen, Netherlands.
Serrano, Professor Antonio, Paraná, Argentina.
Sherff, Dr. E. E., Chicago.
Shimer, Dr. Hervey W., Cambridge, Massachusetts.
Slater, J. R., Tacoma, Washington.
Smith, Harold Vincent, New York.
Smith, Hobart M., Pittsburgh, Pennsylvania.
Smith, Lyman Bradford, Cambridge, Massachusetts.
Spinden, Dr. Herbert J., New York.
Standley, Paul C., Chicago.
Stearn, William Thomas, London, England.
Stillwell, Jerry E., Dallas, Texas.
Stirton, R. A., Berkeley, California.
Stromer, Dr. Ernst.

Teilhard de Chardin, P., Nanking, China.
Teixeira de Fonseca, Enrico, Rio de Janeiro, Brazil.
Thomson, Stewart C., Chicago.

Uthmöller, Wolfgang, Munich, Germany.

Vail, R. W. G., Worcester, Massachusetts.
Vaillant, George C., New York.
Van Epps, Percy M., Amsterdam, New York.
Vanderpool, Ada, Quincy, Illinois.
Varga, H. E., Cleveland, Ohio.
Vargas, Luis, Mexico City, Mexico.
Vestal, Paul A., Cambridge, Massachusetts.
Vetlesen, Mrs. Georg, New York.

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Walker, Dr. James W., Chicago.

Wallace, George J., Boston, Massachusetts.

Wenzel, Rupert L., Chicago.

Whitsett, R. B., Jr., Logansport, Indiana

Wilbur, C. Martin, Chicago.

Wilbur, H. A., New York.

Williams, Llewelyn, Chicago.

Wolcott, A. B., Chicago.

Wolffhugel, Dr. Kurt, Department Puerto, Chile.

Wrigley, J. Brent, Tulsa, Oklahoma.

Wyatt, K., Chicago.

Young, C. C., Nanking, China.

Zingg, Robert Mowry, Denver, Colorado.

ARTICLES OF INCORPORATION

STATE OF ILLINOIS

DEPARTMENT OF STATE

WILLIAM H. HINRICHSSEN, *Secretary of State*

TO ALL TO WHOM THESE PRESENTS SHALL COME, GREETING:

Whereas, a Certificate duly signed and acknowledged having been filed in the office of the Secretary of State, on the 16th day of September, A.D. 1893, for the organization of the COLUMBIAN MUSEUM OF CHICAGO, under and in accordance with the provisions of "An Act Concerning Corporations," approved April 18, 1872, and in force July 1, 1872, and all acts amendatory thereof, a copy of which certificate is hereto attached.

Now, therefore, I, William H. Hinrichsen, Secretary of State of the State of Illinois, by virtue of the powers and duties vested in me by law, do hereby certify that the said COLUMBIAN MUSEUM OF CHICAGO is a legally organized Corporation under the laws of this State.

In Testimony Whereof, I hereto set my hand and cause to be affixed the Great Seal of State. Done at the City of Springfield, this 16th day of September, in the year of our Lord one thousand eight hundred and ninety-three, and of the Independence of the United States the one hundred and eighteenth.

W. H. HINRICHSSEN,
Secretary of State.

[SEAL]

TO HON. WILLIAM H. HINRICHSSEN,

SECRETARY OF STATE:

SIR:

We, the undersigned citizens of the United States, propose to form a corporation under an act of the General Assembly of the State of Illinois, entitled "An Act Concerning Corporations," approved April 18, 1872, and all acts amendatory thereof; and that for the purposes of such organization we hereby state as follows, to-wit:

1. The name of such corporation is the "COLUMBIAN MUSEUM OF CHICAGO."

2. The object for which it is formed is for the accumulation and dissemination of knowledge, and the preservation and exhibition of objects illustrating Art, Archaeology, Science and History.

3. The management of the aforesaid museum shall be vested in a Board of FIFTEEN (15) TRUSTEES, five of whom are to be elected every year.

4. The following named persons are hereby selected as the Trustees for the first year of its corporate existence:

Edward E. Ayer, Charles B. Farwell, George E. Adams, George R. Davis, Charles L. Hutchinson, Daniel H. Burnham, John A. Roche, M. C. Bullock, Emil G. Hirsch, James W. Ellsworth, Allison V. Armour, O. F. Aldis, Edwin Walker, John C. Black and Frank W. Gunsaulus.

5. The location of the Museum is in the City of Chicago, County of Cook, and State of Illinois.

(Signed)

George E. Adams, C. B. Farwell, Sidney C. Eastman, F. W. Putnam, Robert McCurdy, Andrew Peterson, L. J. Gage, Charles L. Hutchinson, Ebenezer Buckingham, Andrew McNally, Edward E. Ayer, John M. Clark, Herman H. Kohlsaat, George Schneider, Henry H. Getty, William R. Harper, Franklin H. Head, E. G. Keith, J. Irving Pearce, Azel F. Hatch, Henry Wade Rogers,

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Thomas B. Bryan, L. Z. Leiter, A. C. Bartlett, A. A. Sprague, A. C. McClurg, James W. Scott, Geo. F. Bissell, John R. Walsh, Chas. Fitzsimmons, John A. Roche, E. B. McCagg, Owen F. Aldis, Ferdinand W. Peck, James H. Dole, Joseph Stockton, Edward B. Butler, John McConnell, R. A. Waller, H. C. Chatfield-Taylor, A. Crawford, Wm. Sooy Smith, P. S. Peterson, John C. Black, Jno. J. Mitchell, C. F. Gunther, George R. Davis, Stephen A. Forbes, Robert W. Patterson, Jr., M. C. Bullock, Edwin Walker, George M. Pullman, William E. Curtis, James W. Ellsworth, William E. Hale, Wm. T. Baker, Martin A. Ryerson, Huntington W. Jackson, N. B. Ream, Norman Williams, Melville E. Stone, Bryan Lathrop, Eliphalet W. Blatchford, Philip D. Armour.

STATE OF ILLINOIS }
COOK COUNTY } ss.

I, G. R. MITCHELL, a NOTARY PUBLIC in and for said County, do hereby certify that the foregoing petitioners personally appeared before me and acknowledged severally that they signed the foregoing petition as their free and voluntary act for the uses and purposes therein set forth.

Given under my hand and notarial seal this 14th day of September, 1893.

G. R. MITCHELL,

[SEAL]

NOTARY PUBLIC, COOK COUNTY, ILL.

CHANGE OF NAME

Pursuant to a resolution passed at a meeting of the corporate members held the 25th day of June, 1894, the name of the COLUMBIAN MUSEUM was changed to FIELD COLUMBIAN MUSEUM. A certificate to this effect was filed June 26, 1894, in the office of the Secretary of State for Illinois.

CHANGE OF NAME

Pursuant to a resolution passed at a meeting of the corporate members held the 8th day of November, 1905, the name of the FIELD COLUMBIAN MUSEUM was changed to FIELD MUSEUM OF NATURAL HISTORY. A certificate to this effect was filed November 10, 1905, in the office of the Secretary of State for Illinois.

CHANGE IN ARTICLE 3

Pursuant to a resolution passed at a meeting of the corporate members held the 10th day of May, 1920, the management of FIELD MUSEUM OF NATURAL HISTORY shall be invested in a Board of TWENTY-ONE (21) TRUSTEES, who shall be elected in such manner and for such time and term of office as may be provided for by the By-Laws. A certificate to this effect was filed May 21, 1920, in the office of the Secretary of State for Illinois.

AMENDED BY-LAWS

DECEMBER, 1939

ARTICLE I

MEMBERS

SECTION 1. Members shall be of twelve classes, Corporate Members, Honorary Members, Patrons, Corresponding Members, Benefactors, Contributors, Life Members, Non-Resident Life Members, Associate Members, Non-Resident Associate Members, Sustaining Members, and Annual Members.

SECTION 2. The Corporate Members shall consist of the persons named in the articles of incorporation, and of such other persons as shall be chosen from time to time by the Board of Trustees at any of its meetings, upon the recommendation of the Executive Committee; provided, that such person named in the articles of incorporation shall, within ninety days from the adoption of these By-Laws, and persons hereafter chosen as Corporate Members shall, within ninety days of their election, pay into the treasury the sum of Twenty Dollars (\$20.00) or more. Corporate Members becoming Life Members, Patrons or Honorary Members shall be exempt from dues. Annual meetings of said Corporate Members shall be held at the same place and on the same day that the annual meeting of the Board of Trustees is held.

SECTION 3. Honorary Members shall be chosen by the Board from among persons who have rendered eminent service to science, and only upon unanimous nomination of the Executive Committee. They shall be exempt from all dues.

SECTION 4. Patrons shall be chosen by the Board upon recommendation of the Executive Committee from among persons who have rendered eminent service to the Museum. They shall be exempt from all dues, and, by virtue of their election as Patrons, shall also be Corporate Members.

SECTION 5. Any person contributing or devising the sum of One Hundred Thousand Dollars (\$100,000.00) in cash, or securities, or property to the funds of the Museum, may be elected a Benefactor of the Museum.

SECTION 6. Corresponding Members shall be chosen by the Board from among scientists or patrons of science residing in foreign countries, who render important service to the Museum. They shall be elected by the Board of Trustees at any of its meetings. They shall be exempt from all dues and shall enjoy all courtesies of the Museum.

SECTION 7. Any person contributing to the Museum One Thousand Dollars (\$1,000.00) or more in cash, securities, or material, may be elected a Contributor of the Museum. Contributors shall be exempt from all dues and shall enjoy all courtesies of the Museum.

SECTION 8. Any person paying into the treasury the sum of Five Hundred Dollars (\$500.00), at any one time, shall, upon the unanimous vote of the Board, become a Life Member. Life Members shall be exempt from all dues, and shall enjoy all the privileges and courtesies of the Museum that are accorded to members of the Board of Trustees. Any person residing fifty miles or more from the city of Chicago, paying into the treasury the sum of One Hundred Dollars (\$100.00) at any one time, shall, upon the unanimous vote of the Board, become a Non-Resident Life Member. Non-Resident Life Members shall be exempt from all dues, and shall enjoy all the privileges and courtesies of the Museum that are accorded to members of the Board of Trustees.

SECTION 9. Any person paying into the treasury of the Museum the sum of One Hundred Dollars (\$100.00), at any one time, shall, upon the vote of the Board, become an Associate Member. Associate Members shall be exempt from all dues, and shall be entitled to tickets admitting Member and members of family, including non-resident home guests; all publications of the Museum issued during the period of their membership, if so desired; reserved seats for all lectures and enter-

tainments under the auspices of the Museum, provided reservation is requested in advance; and admission of holder of membership and accompanying party to all special exhibits and Museum functions day or evening. Any person residing fifty miles or more from the city of Chicago, paying into the treasury the sum of Fifty Dollars (\$50.00) at any one time, shall, upon the unanimous vote of the Board, become a Non-Resident Associate Member. Non-Resident Associate Members shall be exempt from all dues, and shall enjoy all the privileges and courtesies of the Museum that are accorded to Associate Members.

SECTION 10. Sustaining Members shall consist of such persons as are selected from time to time by the Board of Trustees at any of its meetings, and who shall pay an annual fee of Twenty-five Dollars (\$25.00), payable within thirty days after notice of election and within thirty days after each recurring annual date. This Sustaining Membership entitles the member to free admission for the Member and family to the Museum on any day, the Annual Report and such other Museum documents or publications issued during the period of their membership as may be requested in writing. When a Sustaining Member has paid the annual fee of \$25.00 for six years, such Member shall be entitled to become an Associate Member.

SECTION 11. Annual Members shall consist of such persons as are selected from time to time by the Board of Trustees at any of its meetings, and who shall pay an annual fee of Ten Dollars (\$10.00), payable within thirty days after each recurring annual date. An Annual Membership shall entitle the Member to a card of admission for the Member and family during all hours when the Museum is open to the public, and free admission for the Member and family to all Museum lectures or entertainments. This membership will also entitle the holder to the courtesies of the membership privileges of every Museum of note in the United States and Canada, so long as the existing system of co-operative interchange of membership tickets shall be maintained, including tickets for any lectures given under the auspices of any of the Museums during a visit to the cities in which the co-operative museums are located.

SECTION 12. All membership fees, excepting Sustaining and Annual, shall hereafter be applied to a permanent Membership Endowment Fund, the interest only of which shall be applied for the use of the Museum as the Board of Trustees may order.

ARTICLE II

BOARD OF TRUSTEES

SECTION 1. The Board of Trustees shall consist of twenty-one members. The respective members of the Board now in office, and those who shall hereafter be elected, shall hold office during life. Vacancies occurring in the Board shall be filled at a regular meeting of the Board, upon the nomination of the Executive Committee made at a preceding regular meeting of the Board, by a majority vote of the members of the Board present.

SECTION 2. Regular meetings of the Board shall be held on the third Monday of the month. Special meetings may be called at any time by the President, and shall be called by the Secretary upon the written request of three Trustees. Five Trustees shall constitute a quorum, except for the election of officers or the adoption of the Annual Budget, when seven Trustees shall be required, but meetings may be adjourned by any less number from day to day, or to a day fixed, previous to the next regular meeting.

SECTION 3. Reasonable written notice, designating the time and place of holding meetings, shall be given by the Secretary.

ARTICLE III

HONORARY TRUSTEES

SECTION 1. As a mark of respect, and in appreciation of services performed for the Institution, any Trustee who by reason of inability, on account of change of residence, or for other cause or from indisposition to serve longer in such capacity shall resign his place upon the Board, may be elected, by a majority of those present at any regular meeting of the Board, an Honorary Trustee for life. Such Honorary Trustee will receive notice of all meetings of the Board of Trustees,

whether regular or special, and will be expected to be present at all such meetings and participate in the deliberations thereof, but an Honorary Trustee shall not have the right to vote.

ARTICLE IV

OFFICERS

SECTION 1. The officers shall be a President, a First Vice-President, a Second Vice-President, a Third Vice-President, a Secretary, an Assistant Secretary and a Treasurer. They shall be chosen by ballot by the Board of Trustees, a majority of those present and voting being necessary to elect. The President, the First Vice-President, the Second Vice-President, and the Third Vice-President shall be chosen from among the members of the Board of Trustees. The meeting for the election of officers shall be held on the third Monday of January of each year, and shall be called the Annual Meeting.

SECTION 2. The officers shall hold office for one year, or until their successors are elected and qualified, but any officer may be removed at any regular meeting of the Board of Trustees by a vote of two-thirds of all the members of the Board. Vacancies in any office may be filled by the Board at any meeting.

SECTION 3. The officers shall perform such duties as ordinarily appertain to their respective offices, and such as shall be prescribed by the By-Laws, or designated from time to time by the Board of Trustees.

ARTICLE V

THE TREASURER

SECTION 1. The Treasurer shall be custodian of the funds of the Corporation except as hereinafter provided. He shall make disbursements only upon warrants drawn by the Director and countersigned by the President. In the absence or inability of the Director, warrants may be signed by the Chairman of the Finance Committee, and in the absence or inability of the President, may be countersigned by one of the Vice-Presidents, or any member of the Finance Committee.

SECTION 2. The securities and muniments of title belonging to the corporation shall be placed in the custody of some Trust Company of Chicago to be designated by the Board of Trustees, which Trust Company shall collect the income and principal of said securities as the same become due, and pay same to the Treasurer, except as hereinafter provided. Said Trust Company shall allow access to and deliver any or all securities or muniments of title to the joint order of the following officers, namely: the President or one of the Vice-Presidents, jointly with the Chairman, or one of the Vice-Chairmen, of the Finance Committee of the Museum.

SECTION 3. The Treasurer shall give bond in such amount, and with such sureties as shall be approved by the Board of Trustees.

SECTION 4. The Harris Trust & Savings Bank of Chicago shall be Custodian of "The N. W. Harris Public School Extension of Field Museum" fund. The bank shall make disbursements only upon warrants drawn by the Director and countersigned by the President. In the absence or inability of the Director, warrants may be signed by the Chairman of the Finance Committee, and in the absence or inability of the President, may be countersigned by one of the Vice-Presidents, or any member of the Finance Committee.

ARTICLE VI

THE DIRECTOR

SECTION 1. The Board of Trustees shall elect a Director of the Museum, who shall remain in office until his successor shall be elected. He shall have immediate charge and supervision of the Museum, and shall control the operations of the Institution, subject to the authority of the Board of Trustees and its Committees. The Director shall be the official medium of communication between the Board, or its Committees, and the scientific staff and maintenance force.

SECTION 2. There shall be four scientific Departments of the Museum—Anthropology, Botany, Geology, and Zoology; each under the charge of a Chief

Curator, subject to the authority of the Director. The Chief Curators shall be appointed by the Board upon the recommendation of the Director, and shall serve during the pleasure of the Board. Subordinate staff officers in the scientific Departments shall be appointed and removed by the Director upon the recommendation of the Chief Curators of the respective Departments. The Director shall have authority to employ and remove all other employees of the Museum.

SECTION 3. The Director shall make report to the Board at each regular meeting, recounting the operations of the Museum for the previous month. At the Annual Meeting, the Director shall make an Annual Report, reviewing the work for the previous year, which Annual Report shall be published in pamphlet form for the information of the Trustees and Members, and for free distribution in such number as the Board may direct.

ARTICLE VII

THE AUDITOR

SECTION 1. The Board shall appoint an Auditor, who shall hold his office during the pleasure of the Board. He shall keep proper books of account, setting forth the financial condition and transactions of the Corporation, and of the Museum, and report thereon at each regular meeting, and at such other times as may be required by the Board. He shall certify to the correctness of all bills rendered for the expenditure of the money of the Corporation.

ARTICLE VIII

COMMITTEES

SECTION 1. There shall be five Committees, as follows: Finance, Building, Auditing, Pension, and Executive.

SECTION 2. The Finance Committee shall consist of six members, the Auditing and Pension Committees shall each consist of three members, and the Building Committee shall consist of five members. All members of these four Committees shall be elected by ballot by the Board at the Annual Meeting, and shall hold office for one year, and until their successors are elected and qualified. In electing the members of these Committees, the Board shall designate the Chairman and Vice-Chairman by the order in which the members are named in the respective Committee; the first member named shall be Chairman, the second named the Vice-Chairman, and the third named, Second Vice-Chairman, succession to the Chairmanship being in this order in the event of the absence or disability of the Chairman.

SECTION 3. The Executive Committee shall consist of the President of the Board, the Chairman of the Finance Committee, the Chairman of the Building Committee, the Chairman of the Auditing Committee, the Chairman of the Pension Committee, and three other members of the Board to be elected by ballot at the Annual Meeting.

SECTION 4. Four members shall constitute a quorum of the Executive Committee, and in all standing Committees two members shall constitute a quorum. In the event that, owing to the absence or inability of members, a quorum of the regularly elected members cannot be present at any meeting of any Committee, then the Chairman thereof, or his successor, as herein provided, may summon any members of the Board of Trustees to act in place of the absentee.

SECTION 5. The Finance Committee shall have supervision of investing the endowment and other permanent funds of the Corporation, and the care of such real estate as may become its property. It shall have authority to invest, sell, and reinvest funds, subject to the approval of the Board.

SECTION 6. The Building Committee shall have supervision of the construction, reconstruction, and extension of any and all buildings used for Museum purposes.

SECTION 7. The Executive Committee shall be called together from time to time as the Chairman may consider necessary, or as he may be requested to do by three members of the Committee, to act upon such matters affecting the administration of the Museum as cannot await consideration at the Regular Monthly Meetings of the Board of Trustees. It shall, before the beginning of

each fiscal year, prepare and submit to the Board an itemized Budget, setting forth the probable receipts from all sources for the ensuing year, and make recommendations as to the expenditures which should be made for routine maintenance and fixed charges. Upon the adoption of the Budget by the Board, the expenditures stated are authorized.

SECTION 8. The Auditing Committee shall have supervision over all accounting and bookkeeping, and full control of the financial records. It shall cause the same, once each year, or oftener, to be examined by an expert individual or firm, and shall transmit the report of such expert individual or firm to the Board at the next ensuing regular meeting after such examination shall have taken place.

SECTION 9. The Pension Committee shall determine by such means and processes as shall be established by the Board of Trustees to whom and in what amount the Pension Fund shall be distributed. These determinations or findings shall be subject to the approval of the Board of Trustees.

SECTION 10. The Chairman of each Committee shall report the acts and proceedings thereof at the next ensuing regular meeting of the Board.

SECTION 11. The President shall be ex-officio a member of all Committees and Chairman of the Executive Committee. Vacancies occurring in any Committee may be filled by ballot at any regular meeting of the Board.

ARTICLE IX

NOMINATING COMMITTEE

SECTION 1. At the November meeting of the Board each year, a Nominating Committee of three shall be chosen by lot. Said Committee shall make nominations for membership of the Finance Committee, the Building Committee, the Auditing Committee, and the Pension Committee, and for three members of the Executive Committee, from among the Trustees, to be submitted at the ensuing December meeting and voted upon at the following Annual Meeting in January.

ARTICLE X

SECTION 1. Whenever the word "Museum" is employed in the By-Laws of the Corporation, it shall be taken to mean the building in which the Museum as an Institution is located and operated, the material exhibited, the material in study collections, or in storage, furniture, fixtures, cases, tools, records, books, and all appurtenances of the Institution and the workings, researches, installations, expenditures, field work, laboratories, library, publications, lecture courses, and all scientific and maintenance activities.

SECTION 2. These By-Laws may be amended at any regular meeting of the Board of Trustees by a two-thirds vote of all the members present, provided the amendment shall have been proposed at a preceding regular meeting.

BEQUESTS

Bequests to Field Museum of Natural History may be made in securities, money, books or collections. They may, if desired, take the form of a memorial to a person or cause, to be named by the giver. For those desirous of making bequests to the Museum, the following form is suggested:

FORM OF BEQUEST

I do hereby give and bequeath to Field Museum of Natural History of the City of Chicago, State of Illinois, _____

Contributions made within the taxable year to Field Museum of Natural History to an amount not in excess of 15 per cent of the taxpayer's net income are allowable as deductions in computing net income for federal income tax purposes.

Endowments may be made to the Museum with the provision that an annuity be paid to the patron during his or her lifetime. These annuities are guaranteed against fluctuation in amount and may reduce federal income taxes.

FOUNDER

Marshall Field*

BENEFACTORS

Those who have contributed \$100,000 or more to the Museum

Ayer, Edward E.*	Harris, Albert W.	Raymond, James Nelson*
Buckingham, Miss	Harris, Norman W.*	Ryerson, Martin A.*
Kate S.*	Higinbotham, Harlow N.*	Ryerson, Mrs.
		Martin A.*
Crane, Cornelius	Kelley, William V.*	
Crane, R. T., Jr.*		Simpson, James*
Field, Joseph N.*	Pullman, George M.*	Smith, Mrs. Frances
Field, Marshall		Gaylord*
Field, Stanley	Rawson, Frederick H.*	Smith, George T.*
Graham, Ernest R.*	Raymond, Mrs. Anna	Sturges, Mrs. Mary D.*
	Louise	Suarez, Mrs. Diego

* DECEASED

HONORARY MEMBERS

Those who have rendered eminent service to Science

Cutting, C. Suydam	Ludwig, H. R. H. Gustaf	Roosevelt, Theodore
	Adolf, Crown Prince of	
Field, Marshall	Sweden	Sargent, Homer E.
Field, Stanley		Sprague, Albert A.
	McCormick, Stanley	Suarez, Mrs. Diego
Harris, Albert W.	Roosevelt, Kermit	Vernay, Arthur S.

DECEASED, 1939

Crane, Charles R.	Simpson, James
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PATRONS

Those who have rendered eminent service to the Museum

Armour, Allison V.	Ellsworth, Duncan S.	Roosevelt, Kermit
		Roosevelt, Theodore
Chadbourne, Mrs. Emily	Field, Mrs. Stanley	
Crane		Sargent, Homer E.
Chancellor, Philip M.	Hancock, G. Allan	Straus, Mrs. Oscar
Cherrie, George K.		Strawn, Silas H.
Collins, Alfred M.	Kennedy, Vernon Shaw	Suarez, Mrs. Diego
Conover, Boardman	Knight, Charles R.	
Cummings, Mrs.		Vernay, Arthur S.
Robert F.	Moore, Mrs. William H.	
Cutting, C. Suydam		Wegeforth, Dr. Harry M.
Day, Lee Garnett	Probst, Edward	White, Harold A.

CORRESPONDING MEMBERS

Scientists or patrons of science, residing in foreign countries, who have rendered eminent service to the Museum

Breuil, Abbé Henri	Hochreutiner, Dr. B. P.	Keissler, Dr. Karl
Christensen, Dr. Carl	Georges	
Diels, Dr. Ludwig	Humbert, Professor	Keith, Professor Sir
	Henri	Arthur

CONTRIBUTORS

Those who have contributed \$1,000 to \$100,000 to the Museum in money or materials

<i>\$75,000 to \$100,000</i>	Everard, R. T.*	Harris, Hayden B.
Chancellor, Philip M.	Gunsaulus, Dr. F. W.*	Harris, Norman Dwight
	Insull, Samuel*	Harris, Mrs. Norman W.*
<i>\$50,000 to \$75,000</i>	Laufer, Dr. Berthold*	Hutchinson, C. L.*
Keep, Chauncey*	Lufkin, Wallace W.	Keith, Edson*
Rosenwald, Mrs.	McCormick, Cyrus	Langtry, J. C.
Augusta N.*	(Estate)	MacLean, Mrs. M.
	McCormick, Stanley	Haddon
<i>\$25,000 to \$50,000</i>	Mitchell, John J.*	Mandel, Leon
Adams, Mrs. Edith	Reese, Lewis*	Moore, Mrs. William H.
Almy*	Robb, Mrs. George W.	Payne, John Barton*
Blackstone, Mrs.	Rockefeller Foundation,	Pearsons, D. K.*
Timothy B.*	The	Porter, H. H.*
Coats, John*	Sargent, Homer E.	Ream, Norman B.*
Crane, Charles R.*	Schweppe, Mrs.	Revell, Alexander H.*
	Charles H.*	
Field, Mrs. Stanley	Straus, Mrs. Oscar	Salie, Prince M. U. M.
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 Dimick, Miss Elizabeth
 Dixon, Alan C.
 Dixon, William Warren
 Doctor, Isidor
 Dodge, Mrs. Paul C.
 Doering, Mrs.
 Edmund J., Jr.
 Doering, Otto C.
 Doerr, William P., Sr.
 Doetsch, Miss Anna
 Dole, Arthur
 Dolese, Mrs. John
 Donker, Mrs. William
 Donlon, Mrs. Stephen E.
 Donnelley, Gaylord
 Donnelley, Mrs. H. P.
 Donnelley, Miss Naomi
 Donnelly, Frank
 Donohue, Edgar T.
 Douglas, James H., Jr.
 Douglass, Kingman
 Drake, Lyman M.
 Drummond, James J.
 Dryden, Mrs. George B.
 Dubbs, C. P.
 Dudley, Laurence H.
 Dugan, Alphonso G.
 Dulany, George W., Jr.
 Dulsky, Mrs. Samuel
 Dunbaugh, Harry J.
 Duncan, Albert G.
 Duner, Dr. Clarence S.
 Duner, Joseph A.
 Dunham, John H.
 Dunham, Miss Lucy
 Belle
 Dunham, Robert J.
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 Dunn, Samuel O.
 Dupee, Mrs. F. Kennett
 Durbin, Fletcher M.

 Easterberg, C. J.
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Ebeling, Frederic O.
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 Eckhart, Percy B.
 Eckstein, Mrs. Louis
 Eddy, George A.
 Eddy, Thomas H.
 Edwards, Miss Edith E.
 Edwards, Kenneth P.
 Egan, William B.
 Egloff, Dr. Gustav
 Ehrman, Edwin H.
 Eichengreen, Edmund K.
 Eisendrath, Edwin W.
 Eisendrath, Miss Elsa B.
 Eisendrath, Robert M.
 Eisendrath, William B.
 Eisenschiml, Mrs. Otto
 Eisenstaedt, Harry
 Eisenstein, Sol
 Eitel, Max
 Elenbogen, Herman
 Elich, Robert William
 Ellbogen, Albert L.
 Ellbogen, Miss Celia
 Elliott, Frank R.
 Ellis, Howard
 Elting, Howard
 Emery, Edward W.
 Engberg, Miss Ruth M.
 Engel, E. J.
 Engstrom, Harold
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 Erickson, Donovan Y.
 Ericson, Mrs. Chester F.
 Ericsson, Clarence
 Ericsson, Dewey A.
 Ericsson, Henry
 Ericsson, Walter H.
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 Erskine, Albert DeWolf
 Etten, Henry C.
 Eustice, Alfred L.
 Evans, Miss Anna B.
 Evans, Mrs. David
 Evans, David J.
 Evans, Eliot H.
 Evans, Evan A.
 Ewell, C. D.
 Ewen, William R. T.

 Fabian, Francis G.
 Fabry, Herman
 Fackt, Mrs. George P.
 Fader, A. L.
 Faget, James E.
 Faherty, Roger
 Fahrenwald, Frank A.
 Faithorn, Walter E.
 Falk, Miss Amy
 Farnham, Mrs. Harry J.
 Farrell, Mrs. B. J.
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 Faurot, Henry, Jr.
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 Feiwell, Morris E.
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 George
 Feltman, Charles H.
 Fergus, Robert C.
 Fernald, Robert W.
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 Fetcher, Edwin S.
 Fetzner, Wade
 Fies, Mrs. E. E.
 Filek, August
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 Fineman, Oscar
 Finley, Max H.
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 Fishbein, Dr. Morris
 Fisher, Mrs. Edward
 Metcalf
 Fisher, Harry M.
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 Flexner, Washington
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 Florsheim, Irving S.
 Florsheim, Mrs.
 Milton S.
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 Foreman, Edwin G., Jr.
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 Forman, Charles
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 Foster, Volney
 Fowler, Miss Elizabeth
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 Freudenthal, G. S.
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 Furst, Eduard A.

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 Gallagher, Vincent G.
 Gallup, Rockwell
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Henry, Otto
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Hillebrecht, Herbert E.
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Hind, Mrs. John Dwight
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Hoffmann, Edward
Hempstead
Hogan, Robert E.
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Hollingsworth, R. G.
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Hollister, Francis H.
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Holmes, Miss Harriet F.
Holmes, Mrs. Maud G.
Holmes, William
Holmes, William N.
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Hoover, Mrs. Frank K.
Hoover, Mrs. Fred W.
Hoover, H. Earl
Hoover, Ray P.
Hope, Alfred S.
Hopkins, Farley
Hopkins, Mrs. James M.
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Horcher, William W.
Horne, Mrs. William Dodge, Jr.
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Horner, Mrs. Maurice L., Jr.
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Horst, Curt A.
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Horton, Hiram T.
Horton, Horace B.
Hosbein, Louis H.
Hosmer, Philip B.
Hottinger, Adolph
Howard, Willis G.

Howe, Charles Arthur
 Howe, Clinton W.
 Howe, Mrs. Pierce
 Lyman
 Howe, Warren D.
 Howe, William G.
 Howell, Albert S.
 Howell, William
 Howes, Mrs. Frank W.
 Howse, Richard
 Hoyne, Thomas Temple
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 Hubbard, George W.
 Huber, Dr. Harry Lee
 Hudson, Mrs. H.
 Newton
 Hudson, Walter L.
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 Huff, Thomas D.
 Hufty, Mrs. F. P.
 Huggins, Dr. Ben H.
 Hughes, George A.
 Hughes, John E.
 Hughes, John W.
 Hulbert, Mrs. Milan H.
 Hume, John T.
 Humphrey, H. K.
 Huncke, Herbert S.
 Huncke, Oswald W.
 Hunter, Samuel M.
 Hurley, Edward N., Jr.
 Huston, Ward T.
 Huszagh, R. LeRoy
 Huszagh, Ralph D.
 Hutchinson, Foye P.
 Hutchinson, Samuel S.
 Hyatt, R. C.

Ickes, Raymond
 Idelman, Bernard
 Ilg, Robert A.
 Inlander, Samuel
 Irons, Dr. Ernest E.
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 Isham, Henry P.
 Ives, Clifford E.

Jackson, Allan
 Jackson, Archer L.
 Jackson, Miss Laura E.
 Jacobi, Miss Emily C.
 Jacobs, Hyman A.
 Jacobs, Julius
 Jacobs, Louis G.
 Jacobs, Walter H.
 Jacobs, Whipple
 Jacobson, Raphael
 Jaffray, Mrs. David S.
 James, Edward P.
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 Jameson, Clarence W.
 Janusch, Fred W.

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 Tallmadge
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 Gilbert
 Jenks, William Shippen
 Jennings, Ode D.
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 Jerger, Wilbur Joseph
 Jetzinger, David
 Jirka, Dr. Frank J.
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 John, Dr. Findley D.
 Johnson, Alvin O.
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 Johnson, Mrs. Harley
 Alden
 Johnson, Isaac Horton
 Johnson, Joseph M.
 Johnson, Nels E.
 Johnson, Mrs. O. W.
 Johnson, Olaf B.
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 Johnston, Arthur C.
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 Johnston, Mrs. Hubert
 McBean
 Johnston, Mrs. M. L.
 Johnstone, George A.
 Johnstone, Dr. Mary
 M. S.
 Jones, Albert G.
 Jones, G. Herbert
 Jones, James B.
 Jones, Dr. Margaret M.
 Jones, Melvin
 Jones, Miss Susan E.
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 Joseph, Louis L.
 Joy, Guy A.
 Joyce, Joseph
 Judson, Clay
 Juergens, H. Paul
 Julien, Victor R.
 Junkunc, Stephen

Kaercher, A. W.
 Kahn, Gus
 Kahn, J. Kesner
 Kahn, Louis
 Kaine, James B.
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 Kanter, Jerome J.
 Kaplan, Nathan D.
 Karcher, Mrs.
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Karpen, Michael
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 Kauffmann, Alfred
 Kavanagh, Clarence H.
 Kavanagh, Maurice F.
 Kay, Mrs. Marie E.
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 Keeney, Albert F.
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 Kelker, Rudolph F., Jr.
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 Kelly, Edward T.
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 Kemp, Mrs. E. M.
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 Kempner, Stan
 Kendall, Mrs. Virginia H.
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 Kennedy, Miss Leonore
 Kennedy, Lesley
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 Keogh, Gordon E.
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 Kinsey, Robert S.
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 Klein, Arthur F.
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 Kleinpell, Dr. Henry H.
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 Koch, Raymond J.
 Kochs, August
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 Komiss, David S.
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 Kraft, James L.
 Kraft, Norman
 Kralovec, Emil G.
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 Kunstadter, Sigmund W.
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 Kurtzon, Morris

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 Loeb, Hamilton M.
 Loeb, Jacob M.
 Loeb, Leo A.
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 Loewenstein, Sidney
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 McErlean, Charles V.
 McGarry, John A.
 McGraw, Max
 McGuinn, Edward B.
 McGurn, Mathew S.
 McHugh, Mrs. Grover
 McIntosh, Arthur T.
 McIntosh, Mrs. Walter G.
 McKinney, Mrs. Hayes
 McLaury, Mrs. C. W.
 McMenemy, L. T.
 McMillan, James G.
 McMillan, John
 McMillan, W. B.
 McMillan, William M.
 McNamara, Louis G.
 McNamee, Peter F.
 McNulty, Joseph D.
 McQuarrie, Mrs. Fannie
 McVoy, John M.
 Mead, Dr. Henry C. A.
 Medsker, Dr. Ora L.
 Melcher, George Clinch
 Melchione, Joseph
 Melendy, Dr. R. A.
 Melnick, Leopold B.
 Merrell, John H.
 Merriam, Miss Eleanor
 Merrill, William W.
 Merz, Edward E.
 Metz, Dr. A. R.
 Meyer, Mrs. A. H.
 Meyer, Abraham W.
 Meyer, Albert
 Meyer, Charles Z.
 Meyer, Sam R.
 Meyer, William
 Meyercord, George R.
 Meyers, Erwin A.
 Michaels, Everett B.
 Midowicz, C. E.
 Milhening, Frank
 Miller, Miss Bertie E.
 Miller, Charles B.
 Miller, Mrs. Clayton W.
 Miller, Mrs. Darius
 Miller, Mrs. Donald J.
 Miller, Mrs. F. H.
 Miller, Hyman
 Miller, John S.
 Miller, Mrs. Olive
 Beaupre
 Miller, Oscar C.
 Miller, Mrs. Phillip
 Miller, R. T.
 Miller, Walter E.
 Miller, William S.
 Mills, Allen G.
 Mills, Fred L.
 Mills, John, Sr.
 Mills, Mrs. William S.
 Miner, Dr. Carl S.
 Miner, H. J.
 Minotto, Mrs. James
 Minturn, Benjamin E.
 Mitchell, George F.
 Mitchell, John J.
 Mitchell, Mrs. John J.
 Mitchell, Leeds
 Mitchell, Oliver
 Mock, Dr. Harry Edgar
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 Moeling, Mrs. Walter G.
 Moeller, Rev. Herman H.
 Moffatt, Mrs.
 Elizabeth M.
 Moist, Mrs. Samuel E.
 Molloy, David J.
 Moltz, Mrs. Alice
 Monheimer, Henry I.
 Monroe, William S.
 Montgomery, Dr.
 Albert H.
 Moore, C. B.
 Moore, Philip Wyatt
 Moos, Joseph B.
 Moran, Brian T.
 Moran, Miss Margaret
 Morey, Charles W.
 Morf, F. William
 Morgan, Alden K.
 Morgan, Mrs.
 Kendrick E.
 Morris, Edward H.
 Morris, Mrs. Seymour
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Morrison, Mrs. Harry
Morrison, James C.
Morrison, Matthew A.
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Morse, Leland R.
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Mortenson, Mrs. Jacob
Morton, Sterling
Morton, William Morris
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Moss, Jerome A.
Mouat, Andrew J.
Mowry, Louis C.
Moyer, Mrs. Paul S.
Mudge, Mrs. John B.
Muehlstein, Mrs. Charles
Mueller, Austin M.
Mueller, Miss Hedwig H.
Mueller, J. Herbert
Mueller, Paul H.
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Jane
Mulholland, William H.
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Murphy, Robert E.
Musselman, Dr. George H.

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Nadler, Dr. Walter H.
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Nahigian, Sarkis H.
Nash, Charles J.
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Nathan, Claude
Nebel, Herman C.
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Neilson, Mrs. Francis
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Nelson, Donald M.
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Nelson, Victor W.
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Neu, Clarence L.
Neuffer, Paul A.
Neumann, Arthur E.
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Nichols, Mrs. George
R., Jr.
Nichols, J. C.

Nichols, S. F.
Nicholson, Thomas G.
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Novak, Charles J.
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Noyes, Allan S.
Noyes, David A.
Noyes, Mrs. May Wells
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Hermien D.
Nyman, Dr. John Egbert

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Odell, William R., Jr.
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Offield, James R.
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Olcott, Mrs. Henry C.
Oldefest, Edward G.
O'Leary, John W.
Oliver, Gene G.
Oliver, Mrs. Paul
Olson, Gustaf
Olson, Rudolph J.
Oppenheimer, Alfred
Oppenheimer, Mrs.
Harry D.
Orndoff, Dr. Benjamin H.
O'Rourke, Albert
Orr, Mrs. Robert C.
Orr, Thomas C.
Orthal, A. J.
Ortmayer, Dr. Marie
Osborn, Mrs. Gertrude L.
Osborn, Theodore L.
Ostrom, Mrs. James
Augustus
Otis, J. Sanford
Otis, Joseph E.
Otis, Joseph Edward, Jr.
Otis, Ralph C.
Otis, Stuart Huntington
Ouska, John A.
Overton, George W.
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Nathaniel A.
Paasche, Jens A.
Packard, Dr. Rollo K.

Paepcke, Walter P.
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Park, R. E.
Parker, Frank B.
Parker, Dr. Gaston C.
Parker, Dr. J. William
Parker, Norman S.
Parker, Troy L.
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Parmelee, Dr. A. H.
Partridge, Lloyd C.
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Patterson, Mrs. Wallace
Pauling, Edward G.
Payne, Professor James
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Peabody, Howard B.
Peabody, Miss Susan W.
Peacock, Robert E.
Peacock, Walter C.
Pearl, Allen S.
Pearse, Langdon
Pearson, F. W.
Pearson, George
Albert, Jr.
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Peet, Mrs. Belle G.
Peirce, Albert E.
Pelley, John J.
Peltier, M. F.
PenDell, Charles W.
Percy, Dr. Nelson
Mortimer
Perkins, A. T.
Perkins, Mrs. Herbert F.
Perry, Dr. Ethel B.
Perry, I. Newton
Peter, William F.
Peterkin, Daniel
Peters, Harry A.
Petersen, Jurgen
Petersen, Dr. William F.
Peterson, Albert
Peterson, Alexander B.
Peterson, Arthur J.
Peterson, Axel A.
Peterson, Mrs. Bertha I.
Pfau, A. J.
Pflock, Dr. John J.
Phelps, Mason
Phelps, Mrs. W. L.
Phemister, Dr. Dallas B.
Phillips, Dr. Herbert
Morrow
Phillips, Mervyn C.
Picher, Mrs. Oliver S.
Pick, Albert, Jr.

- Pick, Frederic G.
 Pierce, J. Norman
 Pierce, Paul, Jr.
 Pink, Mrs. Ira M.
 Pirie, Mrs. John T.
 Pitcher, Mrs. Henry L.
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 Plapp, Miss Doris A.
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 Plunkett, William H.
 Podell, Mrs. Beatrice
 Hayes
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 Pontius, Dr. John R.
 Pool, Marvin B.
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 Arthur
 Poole, George A.
 Poole, Mrs. Ralph H.
 Poor, Fred A.
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 Pope, Henry
 Pope, Herbert
 Poppenhagen, Henry J.
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 Porterfield, Mrs. John F.
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 Post, Mrs. Philip Sidney
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 Pottenger, Miss
 Zipporah Herrick
 Powell, Isaac N.
 Prah, Frederick A.
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 Prentice, John K.
 Primley, Walter S.
 Prince, Rev. Herbert W.
 Prince, Leonard M.
 Proxmire, Dr.
 Theodore Stanley
 Prussing, Mrs. R. E.
 Puckey, F. W.
 Pulver, Hugo
 Purcell, Joseph D.
 Purdy, Sparrow E.
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 Putnam, Miss Mabel C.
 Pyterek, Rev. Peter H.
- Quick, Miss Hattiemae
 Quigley, William J.
- Raber, Franklin
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- Raftree, Miss Julia M.
 Railton, Miss Frances
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 Randall, Irving
 Randle, Mrs. Charles H.
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 Rankin, Miss Jessie H.
 Raymond, Mrs.
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 Reach, William
 Redfield, William M.
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 Reeve, Frederick E.
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 Reynolds, Harold F.
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 Rice, Laurence A.
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 Rietz, Walter H.
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 Roberts, Shepherd M.
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 Rogers, Dr. Cassius C.
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 Rosenthal, Kurt
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 Sargent, John R. W.
 Sargent, Ralph
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 Schacht, John H.
 Schafer, O. J.
 Schaffner, Mrs. Joseph
 Schaffner, Robert C.
 Scheidenhelm, Edward L.
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 Schlake, William
 Schmidt, Adolf
 Schmidt, Dr. Charles L.
 Schmidt, Mrs. Minna
 Schmitz, Dr. Henry
 Schneider, F. P.
 Schnering, Otto Y.
 Schnur, Ruth A.
 Scholl, Dr. William M.
 Schram, Harry S.
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 Schulze, Mrs. Mathilde
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 J., Jr.
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 Schwarz, Herbert E.
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 Seeberger, Miss Dora A.
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 Seifert, Mrs. Walter J.

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 Seipp, Clarence T.
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 Seipp, Edwin A., Jr.
 Seipp, William C.
 Sello, George W.
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 Seng, V. J.
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 Sennekohl, Mrs. A. C.
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 Shaffer, Charles B.
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 Shaw, Theodore A.
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 Shoup, A. D.
 Shumway, Mrs. Edward
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 Sidley, William P.
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 Sigman, Leon
 Silander, A. I.
 Silberman, Charles
 Silberman, David B.
 Silberman, Hubert S.
 Sills, Clarence W.
 Silverthorne, George M.
 Simond, Robert E.
 Simonds, Dr. James P.
 Sincere, Ben E.
 Sinclair, Dr. J. Frank
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 Sitzler, Dr. L. Grace
 Powell
 Skleba, Dr. Leonard F.
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 Sleeper, Mrs. Olive C.
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 Smith, Mrs. Charles R.
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 Smith, Franklin P.

Smith, Harold Byron
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 Dunlap
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 Walker
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 White
 Smith, Walter Bourne
 Smith, Walter Byron
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 Smullan, Alexander
 Snow, Fred A.
 Snyder, Harry
 Socrates, Nicholas
 Solem, Dr. George O.
 Sonnenschein, Hugo
 Sonneveld, Jacob
 Soper, Henry M.
 Soper, James P., Jr.
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 Soravia, Joseph
 Sorensen, James
 Spencer, Mrs. Egbert H.
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 Spiegel, Mrs.
 Frederick W.
 Spiegel, Mrs. Mae O.
 Spitz, Joel
 Spitz, Leo
 Spitzglass, Mrs.
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 Spohn, John F.
 Spooner, Charles W.
 Spoor, Mrs. John A.
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 Spray, Cranston
 Squires, John G.
 Staack, Otto C.
 Stacey, Mrs. Thomas I.
 Staley, Miss Mary B.
 Stanton, Dr. E. M.
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 Stanton, Henry T.
 Starbird, Miss Myrtle I.
 Stark, Mrs. Harold
 Starrels, Joel
 Stearns, Mrs. Richard I.
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 Steffey, David R.
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 Stein, Dr. Irving
 Stein, L. Montefiore
 Stenson, Frank R.
 Sterba, Dr. Joseph V.

- Stern, Alfred Whitall
 Stern, David B.
 Stern, Felix
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 Stern, Oscar D.
 Stevens, Delmar A.
 Stevens, Edward J.
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 Alexander F.
 Stevenson, Engval
 Stewart, Miss Agnes
 Nannie
 Stewart, Miss Eglantine
 Daisy
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 Graeme
 Stibolt, Mrs. Carl B.
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 Stone, Mrs. Theodore
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 Straus, Henry H.
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 Straus, S. J. T.
 Strauss, Dr. Alfred A.
 Strauss, John L.
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 Strong, Mrs. Walter A.
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 Struby, Mrs. Walter V.
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 Sturges, Solomon
 Sullivan, John J.
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 Sutcliffe, Mrs. Gary
 Sutherland, William
 Sutton, Harold I.
 Swan, Oscar H.
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 Swartchild, William G.
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 Swett, Robert Wheeler
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 Taft, Mrs. Oren E.
 Tarrant, Robert

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 Taylor, J. H.
 Taylor, L. S.
 Teagle, E. W.
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 Teter, Lucius
 Thatcher, Everett A.
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 Thomas, Emmet A.
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 Thompson, Floyd E.
 Thompson, Fred L.
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 Thompson, John R., Jr.
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 Thorne, James W.
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 Thurber, Dr. Austin H.
 Tibbetts, Mrs. N. L.
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 Tilden, Louis Edward
 Tilt, Charles A.
 Titzel, Dr. W. R.
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 Tobias, Clayton H.
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 Touchstone, John Henry
 Towle, Leroy C.
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 Traylor, Mrs. Dorothy J.
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 Turner, Tracy L.
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 Tuthill, Gray B.
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 Tuttle, F. B.
 Tuttle, Mrs. Henry N.
 Tyler, Mrs. Orson K.

 Ullman, Mrs. N. J.
 Ullmann, Herbert S.

 Upham, Mrs. Frederic W.

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 Valentine, Joseph L.
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 Valentine, Patrick A.
 VanArtsdale, Mrs. Flora
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 VanCleaf, Paul
 VanDeventer,
 Christopher
 Vanek, John C.
 VanNess, Gardiner B.
 VanSchaack, R. H., Jr.
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 Vogl, Otto
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 Voynow, Edward E.

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 Waller, James B., Jr.
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 Eliot
 Warren, Allyn D.
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 Washburne, Clarke

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Hempstead, Jr.
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Wassell, Joseph
Waterman, Dr. A. H.
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Watts, Harry C.
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Webster, Henry A.
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Weil, Mrs. Leon
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Weinstein, Dr. M. L.
Weinzelbaum, Louis L.
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Weisbrod, Benjamin H.
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Weissenbach, Mrs.
Minna K.
Weisskopf, Maurice J.
Weisskopf, Dr. Max A.
Welles, Mrs. Donald P.
Welles, Mrs. Edward
Kenneth
Wells, Arthur H.
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Wells, John E.
Wells, Preston A.
Wells, Thomas E.
Wells, Mrs. Thomas E.
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Wendell, Miss
Josephine A.
Wentworth, Mrs.
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Werner, Frank A.
West, J. Roy
West, Miss Mary Sylvia
West, Thomas H.
Westerfeld, Simon
Westrich, Miss T. C.
Wetten, Albert H.

Weymer, Earl M.
Whealan, Emmett P.
Wheeler, George A.
Wheeler, Leo W.
Wheeler, Leslie M.
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Whinery, Charles C.
White, Mrs. James C.
White, James E.
White, Joseph J.
White, Richard T.
White, Sanford B.
White, Selden Freeman
Whitehouse, Howard D.
Whiting, Mrs. Adele H.
Whiting, Lawrence H.
Widdicombe, Mrs. R. A.
Wieland, Charles J.
Wieland, Mrs. George C.
Wienhoeber, George V.
Wilder, Harold, Jr.
Wilder, Mrs. John E.
Wilder, Mrs. T. E.
Wilker, Mrs. Milton W.
Wilkey, Fred S.
Wilkins, George Lester
Wilkins, Miss Ruth
Wilkinson, Mrs.
George L.
Wilkinson, John C.
Willey, Mrs. Charles B.
Williams, Dr. A.
Wilberforce
Williams, Miss Anna P.
Williams, Harry Lee
Williams, J. M.
Williams, Kenneth
Williamson, George H.
Willis, Paul, Jr.
Willis, Thomas H.
Willner, Benton Jack, Jr.
Wills, H. E.
Wilms, Hermann P.
Wilson, Mrs. E. Crane
Wilson, Harry Bertram
Wilson, Mrs. John R.
Wilson, Miss Lillian M.
Wilson, Morris Karl
Wilson, Mrs. Robert
Conover
Wilson, Mrs. Robert E.

Wilson, William
Winans, Frank F.
Windsor, H. H., Jr.
Winston, Mrs. Bertram M.
Winston, Hampden
Winston, James H.
Winter, Irving
Witkowsky, Leon
Wojtalewicz, Rev.
Francis M.
Wolf, Mrs. Albert H.
Wolf, Walter B.
Wood, Mrs. Gertrude D.
Wood, Mrs. Harold F.
Wood, John H.
Wood, Kay, Jr.
Wood, Robert E.
Wood, William G.
Woodmansee, Fay
Woodruff, George
Woods, Weightstill
Worcester, Mrs.
Charles H.
Work, Robert
Works, George A.
Worth, Miss Helen E.
Wright, H. C.
Wright, Warren
Wrigley, Mrs. Charles W.
Wunderlie, H. O.
Wyeth, Harry B.

Yegge, C. Fred
Yerkes, Richard W.
Yondorf, John David
Yondorf, Milton S.
Yondorf, Milton S., Jr.
Yorkey, Mrs. Margaret
Young, E. Frank
Young, George W.
Young, Hugh E.

Zabel, Max W.
Zapel, Elmer
Zerk, Oscar U.
Zerler, Charles F.
Ziebarth, Charles A.
Zimmerman, Herbert P.
Zimmerman, Louis W.
Zinke, Otto A.
Zork, David

DECEASED, 1939

Addleman, Samuel W.
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REPORT SERIES
FIELD MUSEUM OF NATURAL HISTORY
VOLUME 12, NUMBER 2
JANUARY, 1941

PUBLICATION 497

PRINTED IN THE UNITED STATES OF AMERICA
BY FIELD MUSEUM PRESS

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E. E. SHERFF, *Research Associate, Systematic Botany*
EMIL SELLA, *Chief Preparator, Exhibits*
MILTON COPULOS, *Artist-Preparator*

DEPARTMENT OF GEOLOGY

HENRY W. NICHOLS, *Chief Curator*
ELMER S. RIGGS, *Curator, Paleontology*
BRYAN PATTERSON, *Assistant Curator, Paleontology*
PAUL O. MCGREW, *Assistant Curator, Paleontology*
JAMES H. QUINN, *Chief Preparator, Paleontology*
SHARAT K. ROY, *Curator, Geology*
HENRY HERPERS, *Assistant Curator, Geology*
BRYANT MATHER, *Assistant Curator, Mineralogy*

DEPARTMENT OF ZOOLOGY

WILFRED H. OSGOOD, *Chief Curator*
COLIN CAMPBELL SANBORN, *Curator, Mammals*
RUDYERD BOULTON, *Curator, Birds*
C. E. HELLMAYR, *Associate Curator, Birds*
EMMET R. BLAKE, *Assistant Curator, Birds*
BOARDMAN CONOVER, *Research Associate, Birds*
LOUIS B. BISHOP, *Research Associate, Birds*
ELLEN T. SMITH, *Associate, Birds*
MELVIN A. TRAYLOR, JR., *Associate, Birds*
R. MAGOON BARNES, *Curator, Birds' Eggs*
KARL P. SCHMIDT, *Curator, Amphibians and Reptiles*
CLIFFORD H. POPE, *Assistant Curator, Amphibians and Reptiles*
ALFRED C. WEED, *Curator, Fishes*
WILLIAM J. GERHARD, *Curator, Insects*
RUFERT L. WENZEL, *Assistant Curator, Insects*
FRITZ HAAS, *Curator, Lower Invertebrates*
EDMOND N. GUERRET,* *Curator, Anatomy and Osteology*
D. DWIGHT DAVIS, *Curator, Anatomy and Osteology*

* DECEASED, 1940

TAXIDERMISTS

JULIUS FRIESSER
L. L. PRAY
W. E. EIGSTI

C. J. ALBRECHT
LEON L. WALTERS
JOHN W. MOYER

FRANK C. WONDER, *Assistant Taxidermist*
FRANK H. LETTL, *Preparator of Accessories*
NELLIE STARKSON, *Artist-Preparator*

DEPARTMENT OF THE N. W. HARRIS PUBLIC SCHOOL EXTENSION

JOHN R. MILLAR, *Curator*
A. B. WOLCOTT, *Assistant Curator*

THE LIBRARY

EMILY M. WILCOXSON, *Librarian*
MARY W. BAKER, *Associate Librarian*
EUNICE GEMMILL, *Assistant Librarian*

REGISTRAR

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AUDITOR

BENJAMIN BRIDGE

WARREN E. RAYMOND, *Assistant Registrar*
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MARIE B. PABST

ELIZABETH HAMBLETON
BERT E. GROVE

LOREN P. WOODS

PUBLIC RELATIONS COUNSEL

H. B. HARTE

PAUL G. DALLWIG, *the Layman Lecturer*

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JOHN JANECEK, *Assistant Illustrator*

A. A. MILLER, *Collotyper*

CLARENCE B. MITCHELL, *Research Associate, Photography*

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WILLIAM E. LAKE

CAPTAIN OF THE GUARD

E. S. ABBEY

ANNUAL REPORT OF THE DIRECTOR

1940

To the Trustees of Field Museum of Natural History:

I have the honor to present a report of the operations of the Museum for the year ending December 31, 1940. Again I am privileged to report substantial successes in many lines of activity. Perhaps the principal emphasis has been placed upon the rehabilitation of the building itself. For several years financial conditions, and the pressure of new construction and expansion have interfered to some extent with both ordinary and extraordinary maintenance of the splendid structure housing our collections. During the past year it has been possible to refinish completely the roof of the building, replacing all materials found to be defective or in a state of deterioration. The renewal of downspouts begun the year before was brought to completion. The exterior of the entire building was gone over carefully by tuckpointers so that all open cracks which might work to the detriment of the structure were cleaned, filled, and properly pointed. The terrace wall surrounding the building was also checked over in detail and all cracks filled and pointed. Many of the marble blocks which had been pushed out of position by repeated frosts were removed and reset. Excavations were made behind the walls for the purpose of removing and replacing any of the supporting structure in need of attention. Every effort has been made to perfect this work so that the building will be water tight and winter tight. A severe degree of wear and tear is normal in any building subjected to the climatic extremes characteristic of the Chicago area, particularly any structure in such an isolated and exposed location as the Museum's site. It is a source of great satisfaction, therefore, to realize that increased maintenance efforts have now checked the effects of these conditions, and that necessary repairs have been made or are well under way.

The principal exhibition feature of note was the opening on July 31 of the new Hall of Babylonian Archaeology (Hall K), bringing to a culmination the work of about seventeen years, beginning with the Field Museum-Oxford University Expedition to Kish (1923-33). The central feature of this hall is the reconstruction of a gateway of the Sasanid period (Plate 15). A new departure is the installation of a frieze composed of enlarged copies made from impressions of tiny cylinder seals excavated at Kish. The cases, lighting, and

arrangement of the hall are such as to bring it into complete harmony and unity. It tells a most interesting story of this ancient civilization.

Another outstanding new exhibit completed is a habitat group representing the "home life" of fur seals in the Pribilof Islands, Alaska (Plate 19), installed in the Hall of Marine Mammals (Hall N). Containing forty animals, including huge "bulls," as the mature males are called, the much smaller "cows" or females, and the "pups" or young seals, this group is one of the largest exhibits in the Museum and probably is the largest fur seal group in any museum. Twenty, four birds of species inhabiting the same environment as the seals also appear in the group. The animals were collected in 1937 by a special expedition conducted for the purpose by Staff Taxidermist C. J. Albrecht, who spent more than two years after his return in preparation of the exhibit.

Completion of another important new exhibit which has long been in preparation occurred with the hanging of the last group of "The World's Food Plants" murals, painted by Mr. Julius Moessel, in the Hall of Food Plants (Hall 25). Eight of these were hung in the previous year, and the nine additional ones placed on the walls in 1940 complete the project. The paintings depict vividly the husbanding and transportation of the world's important vegetable products. They are of interest not only for the story they tell, which co-ordinates with the exhibits of economically important plants and plant products in the hall, but also as decorative works of art (Plate 16).

Detailed accounts of other new installations, and reinstallations of exhibits, will be found in the departmental sections of this Report.

The exhibition program at Field Museum is approaching the point where a vastly different type of exhibit will come more and more into use. The plans for the construction of habitat groups of animals and birds of the world have almost come to complete realization. The next few years will bring about a change in exhibition technique as new material is prepared. The emphasis will turn from "what things are" to the "how" and "why" of their being. A pioneer in this program is the new exhibit, brought out during 1940, entitled "What is a Bird?" This exhibit shows graphically the main features distinguishing the birds from mammals and reptiles, and goes into such detail as the presentation of cross sections of the tubular bones of birds, enlarged sections illustrating the structure of feathers, and other diagrammatic and explanatory material.

In connection with the opening of the Hall of Babylonian Archaeology (Hall K) the Museum published an illustrated leaflet, *Ancient Seals of the Near East*, by Mr. Richard A. Martin, Curator of Near Eastern Archaeology. Likewise, when the last of the "World's Food Plants" murals was hung in Hall 25, a leaflet, *The Story of Food Plants*, by Dr. B. E. Dahlgren, Chief Curator of Botany, was published.

On the radio Field Museum continued its educational work through the medium of a series entitled "How Do You Know?" given through the courtesy of the National Broadcasting Company over its Blue Network. I am especially indebted to Miss Judith Waller of N.B.C. and to the University Broadcasting Council for their fine co-operation and help in this series. It was our attempt not only to tell the listening public facts revealed by science, but to reveal as well the methods by which scientific conclusions are reached. Through this program it was hoped further to establish in the popular mind the authenticity of scientific research and the correctness of its resulting conclusions.

Upon the invitation of the Zenith Radio Corporation, Field Museum presented a series of television programs. These, of course, were entirely experimental and were devised for the purpose of testing the effectiveness of television as an educational medium for transmitting scientific information. The results clearly indicate the tremendous value this medium will possess when it has been perfected, as it will then carry to millions of children in schoolrooms, as well as to other audiences, a story of science which will reach them both aurally and visually at the same time. It will be possible to demonstrate chemical experiments or to exhibit poisonous reptiles without any danger whatever to the observer. It will be possible to show rare specimens, which should not be entrusted to the risks of even the best transportation facilities, to persons many hundreds of miles distant. The possibilities are, in fact, such as to challenge the imagination and best efforts of all who are interested in producing an enlightened citizenry.

In the expansion of the educational work of Field Museum I am particularly pleased to commend the work of Miss Miriam Wood, Chief of the James Nelson and Anna Louise Raymond Foundation for Public School and Children's Lectures, and of her entire staff of guide-lecturers. This small and effective group of workers is seizing every possible opportunity to promote progressive education through lectures in the Museum and in the classrooms of Chicago's

schools, through the printed "Field Museum Stories," and through mimeographed sheets of information or of questions and answers. In conjunction with the Chicago Public School Broadcasting Council and radio stations associated with it, there has been developed a system of radio follow-ups whereby designated representatives from various schools come to the Museum after the broadcasts and receive additional instruction in the subjects that were featured over the air. Mrs. Leota G. Thomas of the Raymond Foundation, as Chairman of the Chicago Museum-Schools Relations Committee of the Progressive Education Association, has been instrumental in gathering and co-ordinating material of great value in the furtherance of co-operative educational endeavor. It is regretted on the part of the Raymond Foundation that Mr. Loren P. Woods, for two and one-half years a member of its staff, was transferred to the Department of Zoology at the end of the year. In compensation, however, Mr. Woods has assumed a position of increased responsibility and opportunity, as Assistant Curator of Fishes.

Equally important in the field of co-operation with the schools are the activities of the N. W. Harris Public School Extension, which had another successful year of operation. Besides continuing its regular bi-weekly schedule of circulating traveling exhibits to nearly 500 schools and other institutions through which an aggregate of some 500,000 children are repeatedly reached every year, the Harris Extension has developed new types of exhibits, new services, and various technical improvements. How well this department of the Museum is fulfilling its functions was shown again in 1940, as in so many other years, by the many letters of commendation received from teachers, principals, school officials, and large numbers of the school children themselves.

Due to troubled conditions in Europe and Asia, Field Museum sent out no expeditions beyond the limits of the western hemisphere. It is essential, however, that research work be continued, and expeditions must ever be one of the essential activities of a great research museum. Expeditions are necessary in order to procure examples of new and unknown species; they are necessary to round out incomplete representations of plant and animal life, human cultures, or rocks and minerals, so as to establish comprehensive study collections as a basis for reference and further determinations; they are necessary for the training of the newer and younger members of the scientific staff, because a comprehensive knowledge of the subjects within the scope of a museum cannot be obtained alone

from the study of books and isolated specimens. It is essential that the biologist have knowledge of plants and animals in their native surroundings; that the geologist have knowledge of rocks and minerals as they naturally occur; that the ethnologist and archaeologist have knowledge from personal contact with contemporaneous civilizations or the buried relics which their predecessors left behind.

This year, for the fourth time, Mr. Leon Mandel sponsored and led an expedition aboard his yacht, collecting birds, mammals, fishes, and reptiles that inhabit little-known islands and keys of the Caribbean—almost forgotten tiny possessions of the United States, Cuba, Honduras, Mexico, and British Honduras. At the end of the year, Mr. Mandel was planning another expedition to the Galapagos Islands and the coast of Peru. The expedition was scheduled to sail early in January, 1941.

The Magellanic Expedition of Field Museum, which began during the summer of 1939 its work in various parts of South America, including the southernmost tip of that continent, completed its work in 1940. Dr. Wilfred H. Osgood, Chief Curator of Zoology and leader of the party, returned in April, and Mr. Colin C. Sanborn, Curator of Mammals, returned in June.

Details of these and other expeditions will be found in the departmental sections of this Report.

From the Chicago Park District the Museum received during the year \$58,130.33 as compared with \$86,093.85 received in 1939.

In my report for the year 1939 I stated that the legislative act, under which the Chicago Park District levied a tax to aid in the support of Field Museum of Natural History and other museums, was invalidated by the Illinois Supreme Court during the year.

I am now happy to report that during the year 1940 an act was passed by the Legislature of the State of Illinois which corrected the technicality which led to the nullification of the first act. The first tax collections under the new act will become due in 1941.

Credit for framing and passage of this act is due to one of our Trustees, Colonel Albert A. Sprague, and to Mr. Frederick C. Hack, Mr. Charles J. Calderini, Mayor Edward J. Kelly, and Mr. Robert J. Dunham, President of the Chicago Park District, without whose help and co-operation the matter could not have been brought to a satisfactory conclusion.

Of considerable interest and importance is a change in the staff of Field Museum brought about by the retirement of Dr. Wilfred H.

Osgood, who joined the staff July 1, 1909, and has been, since November 1, 1921, Chief Curator of the Department of Zoology. Dr. Osgood is the first to be retired under the provisions of the pension plan announced in the Annual Report of 1939. Fortunately, his retirement does not take from Field Museum the services of this outstanding scientist, but rather gives to this institution and to the entire field of science his best efforts by virtue of freeing him from the routine details of administering a department. It has long been a matter of sincere regret on my part that the system in vogue in our great museums has been such as to reward outstanding scientists by making them chief curators, in which position administrative duties largely interfere with the scientific research which is of outstanding interest to them and of paramount value to the world. Since the system cannot be changed arbitrarily at the moment, it is gratifying to know that the workings of the pension fund may at least bring back into active scientific study many of those men who have served well, who have been honored by appointment to positions of administrative responsibility, and who are willing at last to lay aside those cares to re-engage in the activities in which they are pre-eminently needed.

Mr. Karl P. Schmidt, who has headed the Division of Amphibians and Reptiles at Field Museum since August 1, 1922, succeeds Dr. Osgood as Chief Curator of the Department of Zoology. While I rejoice at this honor so justly bestowed upon him, I must voice my regret at the interference with his scientific endeavors that it is bound to produce. Mr. Clifford H. Pope joined the staff of Field Museum during the year and succeeds Mr. Schmidt as Curator of Amphibians and Reptiles.

Other retirements, new appointments, promotions, and changes in personnel occurred, as follows:

Miss Miriam Wood was appointed Chief of the James Nelson and Anna Louise Raymond Foundation for Public School and Children's Lectures, taking the place of Miss Margaret M. Cornell, who retired at the end of 1939. Miss Wood had been a member of the Raymond Foundation staff since 1929. Early in the year, Mr. Bert E. Grove joined the Raymond Foundation staff as a lecturer.

Mr. Emil Liljeblad, Assistant Curator of Insects, retired on pension, and Mr. Rupert L. Wenzel was appointed to the position thus vacated.

Dr. Alexander Spoehr was appointed Assistant Curator of American Ethnology and Archaeology.

Dr. Francis Drouet, having completed a two-year appointment as Curator of Cryptogamic Botany, was given a permanent appointment to that position. Mr. D. Dwight Davis, Assistant Curator of Anatomy and Osteology, was promoted to Curator; Mr. Paul O. McGrew, Assistant in Paleontology, was promoted to Assistant Curator, and Mr. James H. Quinn, Assistant, was promoted to Chief Preparator in Paleontology, these promotions to be effective from January 1, 1941.

Mr. John Janecek was appointed Assistant Illustrator, and Mrs. Eunice Gemmill was appointed Assistant Librarian. Mr. Farley H. Wade was placed in charge of the Division of Printing, succeeding Mr. Dewey S. Dill. Miss Nellie B. Starkson was appointed Artist-Preparator in the Department of Zoology.

Mr. John William Harrison, a preparator in the Department of Anthropology for many years, was retired on pension, as were Mr. A. W. Mahlmann, pressman in the Division of Printing, and Messrs. John Weber and Patrick Walsh, Museum guards.

A few temporary appointments for specific tasks and periods of time were made, and several new preparators, guards, and clerical assistants were employed during the year.

The Museum was again indebted, as it has been for several years past, for assistance in research work and other activities by a group of volunteer workers who have toiled faithfully. Some of these workers are named in the List of the Staff at the beginning of this book, being designated by the titles "Research Associate" and "Associate," which distinguish them from salaried workers. One other in the list, Mr. Paul G. Dallwig, with the title "The Layman Lecturer," also serves without compensation. Grateful acknowledgment is herewith made to all the volunteers so listed, and also to the following: Miss Anne Harding, Miss Virginia Coward, Miss Jane Darrow, and Miss Margaret Ross, who worked in the Department of Anthropology; Mr. Donald Richards, Mrs. G. B. Stifler, and Dr. V. O. Graham, who assisted in the Department of Botany; Mr. Leonard C. Bettson, Jr., and Mr. John M. Schmidt, who helped in the Department of Geology; Miss Elizabeth Best, Mr. Melvin A. Traylor, Jr., and Mrs. M. J. Taylor, who worked in the Department of Zoology; and Mr. Clarence L. Brown, who served as a volunteer on the lecture staff of the James Nelson and Anna Louise Raymond Foundation for Public School and Children's Lectures.

As in former years, it is my privilege and pleasure to commend especially the splendid work done by workers supplied by the Work

Projects Administration, a federal government agency. Over the period of years that this agency has co-operated with Field Museum many of its workers have developed a high degree of skill. Repeatedly, WPA workers have become employees of Field Museum as vacancies occurred for which they were qualified. Many of the tasks on which they were engaged have become practically dependent upon them, and it is with regret that the tendency toward reduction of personnel on this project is noted. Many objectives have been reached, however, and new methods coupled with improved efficiency must be relied upon to hold the gains made possible with the assistance of this organization. It is especially desired to commend the whole-hearted co-operation of Miss Jessie Steers, Resident Superintendent of the Project. The average number of men and women employed by the WPA at Field Museum during 1940 was 165. The highest number at any one time was 200. The aggregate man-hours worked by the entire force was approximately 257,400.

On September 1, the Director of the Museum was called into the service of the United States Army, serving as a Major of Infantry on the Special Staff of the Sixth Corps Area Headquarters, in Chicago. It is desired to express here to the President and the Board of Trustees of the Museum his appreciation for their liberality in arranging for the continuation of the essential control of the institution by the Director despite the limited time which, temporarily, he is able to devote to that responsibility. It is also desired to record the appreciation of the entire staff of the Museum for the action of the Board of Trustees which guarantees, to every man called into service of the armed forces of the United States for a one-year period under Public Resolution No. 96 or the Selective Service and Training Act of 1940, the return of his former position when he is able to resume it, and the continuation without cost to him of all insurance and pension benefits then in force.

For the third successive year, paid admissions to the Museum declined despite an increase in total attendance. The total number of visitors received at the Museum during 1940 was 1,450,685, exceeding the 1939 attendance by more than 40,000; the paid admissions, however, numbered only 80,888 as against 83,518 in 1939, 91,097 in 1938, and 94,217 in 1937, which was the last year showing an increase in paid admissions.

The uninterrupted growth of total attendance year by year shows that the Museum is fulfilling its educational and cultural missions for an ever greater public. This fact is a source of gratification.

The decrease in paid admissions is not in itself a matter of great moment since it is not the Museum's aim to develop door receipts as a major source of revenue. Nevertheless, in times like the present and the several years past, when income from other sources has declined, the decrease also in paid admissions emphasizes the financial problems of an institution dependent chiefly on income from investment of endowment funds, and on contributions.

As I have noted in past years, the total effectiveness of the Museum's services to the public is by no means measured by the citation of any one figure such as total attendance of more than 1,450,000. To get a truer picture of the institution's sphere of influence, it is necessary to add to this figure the numbers of children reached by the activities of the Harris Extension and the Raymond Foundation, and when this is done it is found that the total number of persons directly reached is close to 2,200,000. But even this does not tell the whole story, for there is a further and greater public whose numbers must run into many millions throughout this country, and abroad, to whom scientific information of Field Museum origin is brought indirectly through many other channels such as radio, publications, and press reports.

Special programs within the Museum itself brought a combined total attendance of 126,951. Included in this category are the spring and autumn courses of lectures for adults on Saturday afternoons in the James Simpson Theatre; the spring, summer, and autumn motion pictures for children presented in the Theatre by the Raymond Foundation; the daily and special guide-lecture tours for adults and children; the Sunday afternoon lectures presented by the Layman Lecturer, Mr. Paul G. Dallwig; and a number of programs for special groups to which the use of the Theatre and Lecture Hall was extended.

Among special groups of visitors coming to the Museum during the year were the adult graduating class of the Chicago Public Schools, whose commencement exercises were held in the James Simpson Theatre in June; the Delta Delta Delta sorority, which attended a special lecture by Mr. Paul G. Dallwig, the Layman Lecturer, in July; a group of 65 librarians from Michigan towns and cities, sent in November by the Kellogg Foundation to make special studies at the Museum; the Mid-West Federation of Geological Societies, which held its meetings at the Museum in December; and the groups of young delegates sent to the Museum annually in December by the National Congress of Four-H Clubs. The Four-H

groups in 1940 numbered 1,522 boys and girls from farms of the United States and Canada, an increase of more than 50 per cent over the groups of the previous year. These groups, especially selected as rewards for good work, represent the cream of North American rural youth. Their Congress is held simultaneously with the International Live Stock Exposition which also is the source of many additional adult visitors received at the Museum each December. At the Live Stock Exposition the Museum co-operated by displaying a number of the traveling exhibits circulated by the N. W. Harris Public School Extension.

The Annual Meeting of the Board of Trustees was held January 15, at which time Mr. Stanley Field was re-elected for his thirty-second consecutive year as President of the Museum. Mr. Silas H. Strawn was elected Second Vice-President, filling the vacancy caused by the death in the previous year of Mr. James Simpson. All other Officers of the Museum were re-elected. At the December 16 meeting of the Trustees, Mr. Boardman Conover was elected to membership on the Board, filling a vacancy which had existed for a year. Mr. Conover for many years has been interested in and intimately associated with the work of Field Museum and has served voluntarily on the staff as Research Associate in Ornithology since 1924. He has been a member and leader of several important Museum expeditions, and has contributed generously to help finance them. For his services and his contributions, the Trustees had previously honored him at various times by electing him a Patron, a Contributor, a Corporate Member, and a Life Member of the Museum.

In recognition of recent eminent services to the Museum, Colonel Albert A. Sprague, Mr. Frederick C. Hack, and Mr. Charles J. Calderini were elected Patrons of the Museum at a meeting of the Board of Trustees held September 28.

At the September meeting, the Museum Trustees also voted to add the names of Mr. Charles H. Schweppe and the late Charles K. Knickerbocker to the list of Contributors to the Museum—a list, maintained in perpetuity, of all persons whose contributions to the institution, in money or materials, range from \$1,000 to \$100,000. At their meeting of November 18, the Trustees elected Mrs. Frederick S. Fish, of New York, a Contributor. Mr. Schweppe's election was in recognition of generous cash contributions for the carrying out of an exhibition project now in preparation. Mr. Knickerbocker was posthumously elected in recognition of his gift of a notable

collection of more than 10,000 birds' eggs, many of them extremely rare, which with previous collections in the Museum gives this institution representation of virtually all species of North American birds' eggs. The election of Mrs. Fish followed her gift of a pair of remarkable carved marble lions from China, which have been added to the exhibits in George T. and Frances Gaylord Smith Hall (Hall 24, Chinese Archaeology).

One new Life Member, Mr. Hughston M. McBain, of Chicago, and one Non-Resident Life Member, Mr. Oscar U. Zerk, of Kenosha, Wisconsin, were elected during 1940.

Beginning on page 302 of this Report will be found complete lists of all classes of Museum Members. The total number of memberships, as of December 31, 1940, was 4,225. There is thus a small gain over the previous year, when the number on the corresponding date was 4,171, and, as this is the second successive year in which a gain has been made, it may be hoped that it indicates a reversal of the previous trend toward decline. The administration of the Museum deeply appreciates the support given it by the civic-minded citizens who are enrolled as Members. The continued growth of membership represents an important source of hope for the continued expansion of the Museum's scientific and educational activities.

At a meeting of the Trustees, held May 27, action was taken to change the name of the Hall of Plant Life (Hall 29) to "Martin A. and Carrie Ryerson Hall," in memory of the late Martin A. Ryerson and the late Mrs. Carrie Ryerson, both of whom were notable benefactors of this institution.

With deep regret, record must be made of the death on February 4, 1940, of Mr. Fred W. Sargent. Mr. Sargent had been a Trustee of the Museum from 1929 until June 19, 1939, when ill health compelled him to resign. For a number of years he was a member of the Auditing Committee.

Note is regretfully made of the death of Mr. Rufus C. Dawes, on January 8, 1940. His passing was a great loss to Chicago, and to the Museum of Science and Industry, of which he was President. In this loss the administration of Field Museum feels a distinct share, for although his own institution demanded most of his time and energy, Mr. Dawes was keenly interested also in the work of Field Museum, and was a Life Member of this institution.

Two veteran members of the scientific staff passed away during the year. Dr. Albert Buell Lewis, Curator of Melanesian Ethnology,

died on October 10, in his seventy-fourth year. He had been a member of the Museum staff since 1908, prior to which he had built up a scholarly background as student and graduate student at the University of Chicago and Columbia University, and as instructor at the University of Nebraska. Dr. Lewis's leadership of the Joseph N. Field South Pacific Expedition (1909-13) resulted in bringing to Field Museum an ethnological collection which has few rivals anywhere in the world in the completeness of its representation of the cultures of such regions as New Guinea, New Britain, and New Caledonia. As a result of his researches, the Museum was able to publish noteworthy contributions to ethnology. He was a Fellow of the American Association for the Advancement of Science and the American Anthropological Association, and a member of Sigma Xi.

Mr. Edmond Narcis Gueret, Curator of Anatomy and Osteology, died on November 30, at the age of eighty-one. Fully sixty-five years of his life were devoted to his specialty, the preparation of animal skeletons and special osteological dissections which layman and scientist alike recognize as among the best that human fingers could devise. The teaching materials in a dozen medical schools, the halls of osteological exhibits in many museums (especially Field Museum, whose staff he joined in 1900), and innumerable preparations in Field Museum's research collections remain as lasting monuments to his skill.

Mr. John Buettner, a pensioner of Field Museum, who had served as a carpenter and preparator from 1894 to 1937, died on July 21.

Under the Museum's group insurance policy, \$3,000 was paid to the widow of Dr. Lewis, \$2,500 to the widow of Mr. Gueret, and \$2,000 to the widow of Mr. Buettner.

As usual, the Museum is indebted to a number of individuals for contributions of funds to insure its progress and the maintenance of its activities; and to many others for gifts of materials to expand the exhibits, the research collections, and the Library. The gratitude of the institution is herewith extended to the donors of all such contributions. In the following paragraphs will be found acknowledgments of some of the outstanding contributions of funds (the list is not complete because in a few instances donors desiring to remain anonymous have requested that their gifts be not publicly noted):

The continued generosity of Mr. Marshall Field, member of the Board of Trustees, which has been of such major importance year

after year in sustaining the Museum over its most difficult financial problems, was again manifested with gifts in 1940 amounting to the munificent total of \$284,680.73.

Gifts from Mr. Stanley Field, President of the Museum, totaled \$22,700 and were placed in a special fund to be used for such purposes as may later be announced.

From Mrs. James Nelson Raymond, Founder of the James Nelson and Anna Louise Raymond Foundation for Public School and Children's Lectures, there were received gifts totaling \$6,000 to be used in meeting the operating expenses of that division of the Museum.

Mr. Charles H. Schweppe contributed the sum of \$2,500 toward the costs of a proposed exhibition project, and pledged himself to meet the further costs when ascertained.

Mrs. Clarence C. Prentice made a contribution of \$1,000 to the Leslie Wheeler Fund for the continued purchase of specimens of birds of prey required to expand the collection begun by the late Leslie Wheeler, former Trustee of the Museum.

The Jewish Welfare Fund, of Chicago, by a final contribution of \$500, paid the balance of its pledge of funds toward the salary of a scientist employed on the Museum staff.

The Rockefeller Foundation contributed \$1,000 as a salary for the temporary employment of an archaeologist to carry out a special research project in connection with Chinese archaeological and historical material. Mr. Malcolm Farley, the expert employed for this purpose, unfortunately died during the course of the work, but the project is being carried to completion by his widow, assisted by other archaeologists.

The late Frederick T. Haskell left the Museum a bequest of \$10,000. A legacy of \$8,000 was designated for the Museum in the will of the late William B. Storey.

In the departmental sections of this book will be found details of the many gifts of material received for the collections of the Museum; such gifts are noted also in the complete List of Accessions which begins on page 278.

One of the most notable gifts received during 1940 consists of X-ray apparatus, fluoroscopic screen, mechanical devices for automatic control and timing, and all other accessories required for the installation of a unique exhibit whereby an Egyptian mummy will be shown intermittently with the projection of the X-rayed image

of its skeleton. This equipment was presented to the Museum by the General Electric X-ray Corporation, of Chicago, which during two exposition seasons operated it, with a mummy lent by Field Museum, as a feature of the General Electric exhibits at the New York World's Fair (1939-40). The roentgenographic and mechanical devices used for the purpose were especially designed and built by the technical and engineering staffs of the X-ray company, and represent an investment of many thousands of dollars. The Museum plans to install this exhibit in a special chamber to be constructed in the Hall of Egyptian Archaeology (Hall J) early in 1941, and the General Electric X-ray Corporation has generously offered the services of its technical experts to assist in completion of this project. The popularity of the exhibit at the New York Fair, where it was viewed by approximately 9,000,000 visitors, indicates that it should prove to be an outstanding public attraction when it has been permanently installed at the Museum.

Field Museum's collection of Chinese ivory objects was more than doubled by a bequest of the late Louis L. Valentine, giving his entire private collection to this institution. Some very fine and old specimens are included in this bequest. Especially noteworthy are a number of late Ming ivories of the sixteenth and seventeenth centuries.

From Mr. Michael Lerner, of New York, the Museum received two very interesting specimens for use in the new Hall of Fishes (Hall O), which is in preparation. One of these is a large Pacific black marlin; the other is a thresher shark.

Mr. Emil Liljeblad, Assistant Curator of Insects, who retired during the year, made a noteworthy gift of his personal collection comprising some 2,500 comparatively small beetles from California. This acquisition will greatly improve the Museum's representation of the many kinds of beetles found in that state. Mr. Liljeblad also made a notable contribution of books and pamphlets to the Museum Library.

A major project of reconstruction and rearrangement in the Museum Library was begun in the latter part of the year, and should be completed early in 1941. This involves converting the former stackroom into a new reading room, and requires rebuilding the ceiling at a lower level to co-ordinate with a new system of indirect lighting by fluorescent tubular lights concealed in coves around the edges of the ceiling. In addition to improved lighting, the new reading room will offer better facilities for the comfort and

convenience of visitors, and will be more accessible to them when they arrive on the third floor by the passenger elevator. Also, the better arrangement will make it possible for attendants to give more efficient service. Included in the reconstruction work are the creation of new offices for the Librarians, and the conversion of the old reading room into a stackroom. The plans for this work are so drawn, and the schedule of construction so timed, that all of the work will be completed without interruption of the Library's service to the public while the changes are being made.

Plans were completed and the first phases of work undertaken for a complete reinstallation of H. N. Higinbotham Hall (Hall 31—the Gem Room), and the hall was temporarily closed for this purpose on September 24. It is expected that the project will be completed, and the hall reopened, early in 1941. New types of exhibition cases and improved lighting will make the display of precious stones much more attractive, and make it possible for those who are interested to study gem characteristics under better conditions than heretofore.

To protect valuable material in offices, laboratories, workshops, storerooms, and libraries on the third floor from casual marauders, wire partitions with sliding doors were installed at the head of the eight stairways leading to that floor. Such protection is most important, especially on Saturday afternoons, Sundays, and holidays, when the majority of the staff are absent. The doors are kept locked at all such times.

In addition to painting backgrounds for several habitat groups opened during the year, and for others still in preparation, Staff Artist Arthur G. Rueckert made studies for certain murals. These are planned for addition to the series on outstanding forms of plant life, begun in Martin A. and Carrie Ryerson Hall (Hall 29) of the Department of Botany by a former Staff Artist, the late Charles A. Corwin.

Success continued to mark the operation of the Book Shop established in the Museum in 1938. Indicative of growing public confidence has been an increase in the number of sales made on mail orders. Visitors to the Museum found a larger and more varied stock of books available for over-the-counter sales. The policy of offering only the best books in the fields related to the Museum's work was maintained. Before any book, either for adults or children, is accepted for display and sale it must first be passed upon by a member of the institution's scientific staff qualified to exercise judgment in the particular subject to which the book pertains.

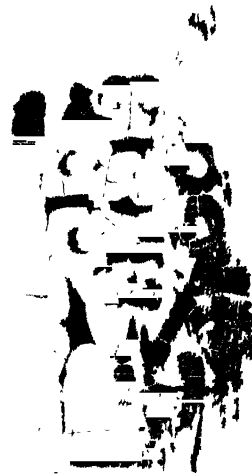
The exhibits at Field Museum continued to serve as inspirational material for sketching and painting by students of the School of the Art Institute of Chicago. The professional art school sent classes to study problems occurring in such courses as the history of art, drawing, composition and research, and pattern design. The classes for children, known as the Saturday Junior Department, were brought to Field Museum by instructors as a part of the regular curriculum. This co-operation is a source of satisfaction to both institutions.

The five hundredth anniversary of the invention in Europe of printing from movable type, and the four hundredth anniversary of the first printing in America, were commemorated in 1940 throughout the nation by printers, publishers, and libraries. Field Museum, in concert with other institutions, recognized this occasion. Two special exhibits of books from the Museum's Library were placed on display, one in Stanley Field Hall in the summer, and one in Albert W. Harris Hall in the autumn.

The first of these temporary exhibits was devoted to some of the world's oldest, and some of its most beautiful, books on natural history. Among the old ones were British, French, Dutch, Venetian, and German works published in the sixteenth and seventeenth centuries. Featured for beauty were such books as the great "elephant folio" edition of Audubon's *The Birds of America*. In order to demonstrate the progress of scientific writing and printing, there were also shown some outstanding books of more recent years. The second exhibit showed the development in books on natural history, and especially the history of biology, from early printings down to the present time. Among works shown were those of Cuvier, Swammerdam, Buffon, Linnaeus, Lamarck, Galton, and Darwin.

Field Museum was represented by an exhibit at the Rotary Business Exposition held in the Hotel Sherman, April 9-12. This exhibit, which included the mounted giant panda Su-Lin, was seen by at least 20,000 persons. Among other items in the display were ancient business documents on cuneiform tablets from Kish, examples of N. W. Harris Public School Extension traveling exhibition cases, material illustrating the activities of the Raymond Foundation, and scientific publications of the Museum. Mr. A. J. Franzen, taxidermist of the Harris Extension, gave demonstrations of the mounting of birds.

A special exhibit illustrating the scope of the work in which Field Museum has been assisted by the Work Projects Administration



CHINESE LACQUERED WOODEN GRILLE

Before and after restoration in the laboratories of the Department of Anthropology. This elaborate grillwork carved from a single wooden plank came from a tomb near Ch'ang Sha, probably dating prior to 200 B C.

George T. and Frances Gaylord Smith Hall (Hall 24), Case 4

was held in George M. Pullman Hall. This was presented in conjunction with the national exhibits by WPA projects in all parts of the country during what was termed "This Work Pays Your Community Week" (May 20-25).

Field Museum was represented at the Exhibition of Persian Art in New York, sponsored by the Iranian Institute of America from April 15 to June 15. The exhibit was the largest of its kind ever attempted in this country, and illustrated the development of Persian art through six thousand years. Field Museum's part in it consisted of a display of stucco and pottery of the Sasanid period from a palace of King Shapur II (fourth century A.D.) excavated by the Field Museum-Oxford University Joint Expedition to Kish. The Board of Trustees agreed to send certain specimens only because they were available nowhere else, and were needed to fill a gap in the otherwise well rounded display.

Especially fine examples of the arts and crafts of North American Indians, selected from the collections of the Department of Anthropology, were lent to the Museum of Modern Art, New York, for inclusion in a special exhibit to be held at that institution from January to April, 1941. Deviating from their established policy of many years, the Trustees consented to this loan at the special and urgent request of the United States Department of the Interior, which was interested in making this exhibit all-inclusive.

Commerce, the magazine published by the Chicago Association of Commerce, accorded recognition to the Museum's many services for business and industry by assigning Mr. Richard Lyon Brown, a special writer, to prepare a comprehensive article on this subject, published in the August issue.

In accordance with the spirit of co-operation existing among the various museums of Chicago, Field Museum presented to the Museum of Science and Industry twenty-seven volumes of *Mining World* and twelve volumes of the *Brick Magazine*. These fall more directly within the scope of the library of the industrial museum than that of this institution.

Dr. Otto Haas, a well-known vertebrate paleontologist from Vienna, worked for several weeks as a volunteer, in collaboration with members of the staff of the Departments of Geology and Zoology, on a research project based upon the Museum's collection of vertebrate fossils.

Members of the Museum staff were honored in various ways during the year:

The degree of Doctor of Philosophy was conferred on Mr. Alexander Spoehr, Assistant Curator of American Archaeology and Ethnology, by the University of Chicago at its quarterly convocation held December 17.

Dr. Paul S. Martin, Chief Curator of Anthropology, was elected President of the Central Section of the American Anthropological Association, and was appointed a member of the Committee on the Conservation of Archaeological and Historical Sites of the Illinois State Academy of Science.

Mr. Bryant Mather, Assistant Curator of Mineralogy, was elected to membership in the Johns Hopkins Chapter of the Society of Sigma Xi, honorary natural history society. Dr. Julian A. Steyermark, Assistant Curator of the Herbarium, was elected Vice-President of the Chicago Aquarium Society. Mr. Emmet R. Blake, Assistant Curator of Birds, was appointed chairman of the field committee of the Chicago Ornithological Society. Mrs. Leota Gregory Thomas, of the Raymond Foundation staff, was appointed chairman of the Chicago Committee for the Museum-School Branch of the Progressive Education Association.

Various members of the Museum staff were active, both in Chicago and outside the city, on local field trips, in special studies in other institutions, in meetings held by various learned societies, as guest speakers for organizations of many kinds, or on radio programs. Among those who figured prominently as lecturers and radio speakers were Mr. Emmet R. Blake, Assistant Curator of Birds; Mr. Loren P. Woods, of the Raymond Foundation staff; Major Clifford C. Gregg, Director; Mr. C. Martin Wilbur, Curator of Chinese Archaeology and Ethnology; Mr. Karl P. Schmidt, Curator of Amphibians and Reptiles; Dr. Julian A. Steyermark, Assistant Curator of the Herbarium; Mr. John W. Moyer and Mr. C. J. Albrecht, Staff Taxidermists; Mr. Rudyerd Boulton, Curator of Birds, and Mr. Bryant Mather, Assistant Curator of Mineralogy.

Mr. Bryan Patterson, Assistant Curator of Paleontology, read two scientific papers at the annual meeting of the vertebrate section of the Paleontological Society of America, held in Pittsburgh. Mr. Henry Herpers, Assistant Curator of Geology, attended meetings of the American Institute of Mining and Metallurgical Engineers in New York. Mr. Emmet R. Blake, Assistant Curator of Birds, made a field trip to study colonies of nesting egrets at Avery Island, Louisiana, as the guest of Mr. John A. Holabird, Mr. Holabird's son Christopher, and Mr. E. A. McIlhenny. By this trip he was

enabled also to bring the Museum a representative collection of Gulf Coast vertebrates. Mr. Blake later attended the meeting of the American Ornithologists' Union at Boston, and presented a paper on "The Brazilian Frontier of Guiana," outlining the work of the Sewell Avery Expedition to British Guiana. Dr. B. E. Dahlgren, Chief Curator of Botany, collected plants during a vacation trip to Brazil. Mr. Karl P. Schmidt, Curator of Amphibians and Reptiles, made a visit of several weeks to Rochester, New York, to compile data on the history of Ward's Natural Science Establishment, an organization which had an important influence on the development of science and scientific museums in this country. Dr. Henry Field, Curator of Physical Anthropology, collected several hundred specimens for the Museum's Departments of Botany, Geology, and Zoology on a field trip in southern Georgia and northern Florida.

Mr. Henry W. Nichols, Chief Curator of Geology, Mr. Elmer S. Riggs, Curator of Paleontology, Mr. Bryant Mather, Assistant Curator of Mineralogy, and Mr. Henry Herpers, Assistant Curator of Geology, attended the meetings of the American Association of Petroleum Geologists, the Society of Exploration Geophysicists, and the Society of Economic Paleontologists and Mineralogists. Field Museum was represented at the Eighth American Scientific Congress at Washington, D.C., by Dr. Wilfred H. Osgood, Chief Curator of Zoology. This notable scientific meeting was held as part of the program commemorating the fiftieth anniversary of the founding of the Pan American Union, and was attended by leading scientists from countries of North, Central, and South America, and the West Indies. Dr. Osgood was honored by being appointed to preside at one of the sessions of the Section of Biological Sciences. Dr. Osgood also attended the meetings of the American Society of Mammalogists at Denver. Miss Miriam Wood, Chief of the Raymond Foundation, Mrs. Emily M. Wilcoxson, Librarian, and Mr. James H. Quinn, of the Division of Paleontology, represented Field Museum at the annual meeting of the American Association of Museums in Detroit. Mr. Quinn presented a paper on a phase of museum technique.

Mr. Rudyerd Boulton, Curator of Birds, attended the meeting of the American Ornithologists' Union in Boston, and presented a paper, "Sea Birds of the West Indies," recounting observations made on the Leon Mandel Caribbean Expedition. Dr. Paul Martin, Chief Curator of Anthropology, presented a paper on the only two known

systems of writing that originated in the New World—those of the Mayas and the Aztecs—before a symposium of epigraphers and other scholars held at the Oriental Institute of the University of Chicago.

In recognition of the excellence of the radio follow-up programs of the Raymond Foundation, Miss Miriam Wood, Chief of its staff, was invited to present a demonstration of this type of work for the benefit of radio educational experts from all over the country who attended the Fourth Annual Broadcast Conference in December.

Field Museum was represented at the Sixth Annual City-wide Recreation Conference, held November 8, by the Director and by Mrs. Leota G. Thomas of the Raymond Foundation staff. The conference was sponsored by the Chicago Recreation Commission. Its theme was "Recreation and Preparedness," discussion being directed upon recreation as an aid to civilian morale in time of emergency.

Many of the noted scientists, and persons distinguished in other fields, who had occasion to visit Chicago during the year made a point of including Field Museum among the institutions they considered of outstanding interest. It is possible to list here only a few of these. Among the many to whom the Museum was host were: Lord Lothian, British Ambassador to the United States; Dr. Julian S. Huxley, Secretary, London Zoological Society; Mr. Arthur Upham Pope, Director, Iranian Institute of America, New York; Dr. William B. Pettus, President, College of Chinese Studies, Peking; Dr. Adolfo D. Holmberg, Director, Zoological Gardens, and professor in the University of Buenos Aires; Count Jerzy Potocki, Ambassador of Poland to the United States; Mr. Alfred M. Bailey, Director, Colorado Museum of Natural History; Mr. Frederic Douglass, Acting Director, Denver Art Museum; Dr. James G. Needham, Emeritus Professor of Entomology, Cornell University; Dr. Aleš Hrdlička, Curator, Physical Anthropology, United States National Museum; Mr. David Finley, Director, National Gallery of Art, Washington, D.C.; and His Beatitude, Eshai Shimun, Patriarch of the Church of the East.

The Museum Cafeteria served meals to 97,225 persons during 1940. The rooms provided for children and others bringing their own lunches were used by 75,738 persons. A special lunch counter supplied to the larger part of the latter group supplementary refreshments such as hot beverages, soft drinks, sandwiches, ice cream, etc., but the tables and benches in these rooms are available to visitors regardless of whether they make such purchases or not.

Detailed accounts of activities in the various Departments and Divisions of the Museum will be found in the pages that follow:

DEPARTMENT OF ANTHROPOLOGY

RESEARCH

During the year work on various research problems was undertaken by members of the Department of Anthropology staff, and satisfactory progress was made.

Dr. Paul S. Martin, the Chief Curator, and Mrs. Elizabeth S. Willis published their long-awaited book, *Anasazi Painted Pottery in Field Museum of Natural History* (Anasazi is a Navaho term used by archaeologists to denote all Pueblo and Basket Maker culture periods of the Southwest).

Most of the pottery illustrated in this memoir was collected in the 1890's by various Field Museum expeditions to the Southwest. The collection, about 5,000 pieces, includes many rare and even unique items, most of which had never been exhibited to the public and none of which had been studied by experts. The volume illustrates about one-fifth of the entire collection, both typical and rare pieces, and contains descriptions and pertinent data as to locality, type, and chronology. This study, which took more than two years to complete, makes the collection available to all interested persons—laymen, artists, teachers, and students, as well as archaeologists. The work exemplifies the manner in which present-day methods of scholarship and research can be applied to make useful various materials collected in the haphazard fashion of fifty years ago. It shows how such methods can extract new details from a hitherto dead and useless collection, and how they can vivify it for all to use and enjoy.

Mr. Richard A. Martin, Curator of Near Eastern Archaeology, completed the research necessary for the installation of material from the ancient city of Kish in the Hall of Babylonian Archaeology (Hall K), which was opened to the public in August. A preview of the hall was held for the press, special guests, and members of Field Museum. Further details concerning this hall will be found in this Report under Installations and Rearrangements. Mr. Martin also prepared a leaflet entitled *Ancient Seals of the Near East*, which describes in detail the frieze in this hall, and gives translations of inscriptions appearing on the seals. The specimens in Hall K were excavated by the Field Museum-Oxford University Joint Expedition to Mesopotamia (1923-33).

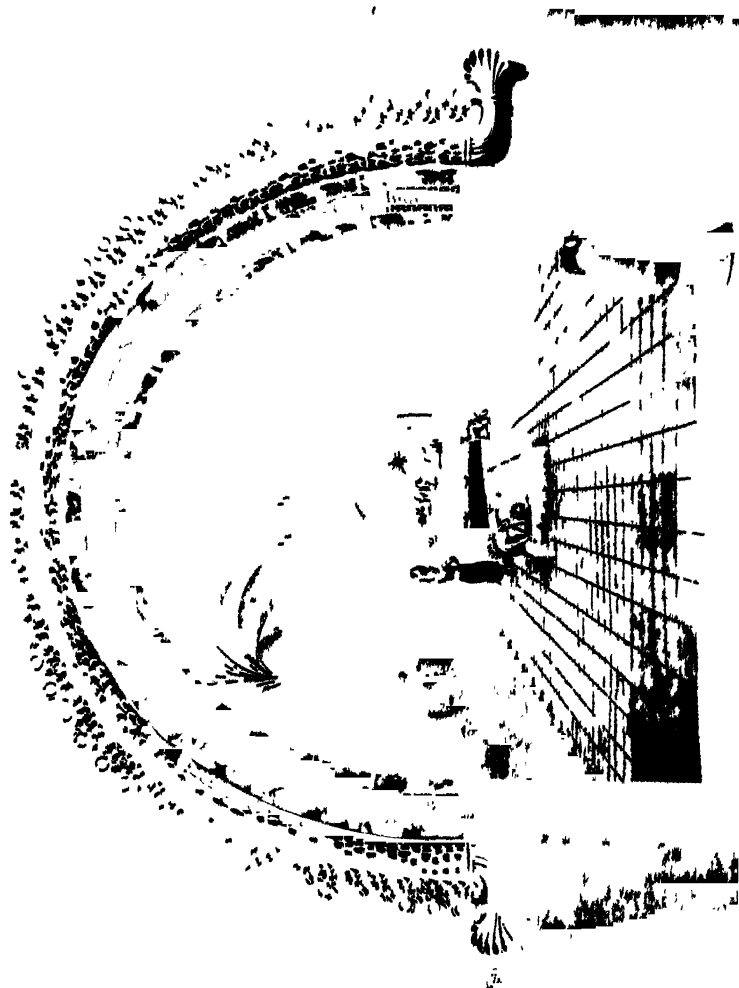
The Etruscan, Egyptian, Roman, Syrian, and Arabian jewelry in the Gem Room (H. N. Higinbotham Hall—Hall 31) was also catalogued by Curator Martin.

Dr. Wilfrid D. Hambly, Curator of African Ethnology, devoted the early part of the year to preparation of *Craniometry of New Guinea*, published by Field Museum Press. The book was released in February. This volume contains a full record of measurements on 195 skulls brought to Field Museum by the late Dr. Albert B. Lewis, leader of the Joseph N. Field Anthropological Expedition to the South Sea Islands (1909–13). This is the largest collection of crania from New Guinea that has yet been studied and the resulting data made public. The report contains a comparative study of Melanesian, Polynesian, Australian aborigines, and African Negro skulls.

This report is the forerunner of a series of publications on craniometry, based on collections which have accumulated in Field Museum since 1893. Research during 1940 was concentrated on approximately 100 skulls from the islands of Melanesia and Polynesia. The plan of work is to produce a series of brief reports on various regions of the Pacific, and in summation a succinct, comparative study of racial types of the whole Pacific region.

Mr. C. Martin Wilbur, Curator of Chinese Archaeology and Ethnology, conducted research upon and directed installation of many newly acquired specimens. A lacquered wooden grille for a coffin, probably dating from the third century B.C., archaic bronzes, pottery, and porcelain from several periods, two monumental stone lions, and Chinese peasant embroideries were put on exhibition. Mr. Wilbur also studied Chinese texts for information concerning social and economic conditions during the last two centuries before Christ. This work was done in preparation for a forthcoming book on *Slavery in China During the Former Han Period*.

Dr. Alexander Spoehr, Assistant Curator of North American Archaeology and Ethnology, prepared for publication a report for Field Museum Press on *Skidi Pawnee Society*, by the late George A. Dorsey and the late James R. Murie. The notes for this publication were collected from 1903 to 1907 by Dr. Dorsey, aided by Murie, a Pawnee Indian. Dorsey later prepared a rough draft for this report from his notes. Dr. Spoehr used this first draft as the basis for the book in its final form. This publication was released in September. In addition, Dr. Spoehr supervised checking, sorting, and cleaning of Middle American and South American specimens



SASANID PORTAL

Stucco decoration from a royal building constructed by Shapur II (Fourth Century A.D.) at Kish
Excavated by Field Museum-Oxford University Joint Expedition, and reconstructed in the
Hall of Babylonian Archaeology (Hall K)

in the archaeological storeroom, and worked on plans for reinstallation of Hall B (American Archaeology).

Up to the time of his death on October 10, 1940, Dr. Albert B. Lewis, Curator of Melanesian Ethnology, supervised the reinstallation of many cases in Hall G (Malaysian Ethnology). This entailed writing more comprehensive labels, selecting suitable photographs to illustrate the specimens, and rearranging the material on the screens in a more attractive manner.

During the year, Dr. Henry Field, Curator of Physical Anthropology, completed Part I, No. 1, of *The Anthropology of Iraq—The Upper Euphrates*. The manuscript on *The Anthropology of Iraq*, Part I, No. 2—*The Lower Euphrates-Tigris Region*—has been turned over to the Museum Press. Dr. Field spent several weeks at Harvard University completing a research project on the physical anthropology of the modern peoples of Iraq.

Mrs. Rose Miller continued volunteer work in studying and arranging the collection of 3,000 rubbings of Chinese historical monuments.

Mr. John Rinaldo, Associate in Southwestern Archaeology, worked on *The Su Site, Excavations at a Mogollon Village, Western New Mexico, 1939*, a report of the 1939 Field Museum Expedition to the Southwest, led by Dr. Paul S. Martin. He helped also in preparation of a case showing the growth and development of stone tools in the Southwest, and a case of pottery and artifacts from Lowry Ruin (Hall 7). The latter embodies the latest ideas for exhibiting materials, the uses of which are vividly illustrated by means of four paintings by Miss Anne Harding. Mr. Rinaldo also helped in cataloguing several collections.

Miss Marjorie Kelly, who is likewise an Associate in Southwestern Archaeology, worked on skeletal material for the report of the 1939 Field Museum Expedition. Her report was included in *The Su Site, Excavations at a Mogollon Village, Western New Mexico, 1939*, published in June, 1940. Miss Kelly also cleaned and sorted pottery.

Miss Anne Fuller, Volunteer Assistant, aided in the arrangement of archaeological materials.

Miss Margaret Ross, Volunteer Assistant, rendered valuable assistance in drawing layout sketches in color for the reinstallation of Hall B (American Archaeology). She also verified accessions and catalogue numbers for a periodic inventory.

Miss Virginia Coward, Volunteer Assistant, gave valuable help in checking specimens and records in connection with the cataloguing

of gems and the recataloguing of pottery from the Southwest. She also mounted many photographs, verified accessions and catalogue numbers for check lists, labeled a study collection of Southwestern pottery, and did much clerical work.

Miss Anne Harding, Volunteer Assistant, painted several water colors depicting Pueblo life. These are exhibited in Hall 7 (Archaeology and Ethnology of the Southwestern United States). She also completed layout sketches for the proposed reinstallation of Hall B.

Miss Jane Darrow, Volunteer Assistant, who began work in November, has typed more than 500 cards for the geographical subject index of specimens in this Department. In addition, she has been helpful in editing and revising manuscripts.

The Department of Anthropology contributed fifteen articles to *Field Museum News*, and data for many articles published in newspapers.

During the year, members of the staff of the Department devoted many hours to preparation of scripts for "How Do You Know?" a series of Museum radio programs. Several members of the Department likewise participated in experimental television programs sponsored by the Zenith Radio Corporation.

ACCESSIONS—ANTHROPOLOGY

The Department of Anthropology listed 28 accessions, comprising 1,014 specimens, of which 437 were gifts, 116 were acquired by exchange, one was purchased, and 460 were among previously uncatalogued material in departmental storerooms.

As a result of an outstanding gift received in 1940 from the General Electric X-ray Corporation, Chicago, this Department will be enabled in 1941 to add a most unusual and spectacular exhibit to the Hall of Egyptian Archaeology (Hall J). The gift includes all the X-ray equipment and accessories required for installation in the Museum of the exhibit featured by General Electric for two seasons at the New York World's Fair (1939-40) in which a mummy (sent to the Fair on loan from Field Museum's collections) was X-rayed before the public view at intervals of less than one minute throughout the exposition visiting hours. This interesting exhibit will no doubt attract the same widespread attention at the Museum that it did at the Fair.

Notable gifts of Chinese specimens during the years included two monumental stone lions from Peking, now exhibited in George T.

and Frances Gaylord Smith Hall (Hall 24). They came from Mrs. Frederick S. (Grace Studebaker) Fish, of New York, and probably date from the eighteenth century. In recognition of this valuable gift, the Trustees of the Museum elected Mrs. Fish a Contributor, an honor which continues in perpetuity.

A collection of carved ivories was received from the Estate of Louis L. Valentine, Chicago; and eleven ceramic specimens, ranging in date from the Han to Ch'ing dynasties, were given by the firm of Grow and Cuttle, of Chicago.

The Cenozoic Research Laboratory of Peking Union Medical College presented a colored cast of the reconstruction of the "Peking Man," one of the oldest representatives of the human race. This most welcome gift has been placed on exhibition in the Hall of the Stone Age of the Old World (Hall C).

The Estate of Mrs. A. L. Fisher, of Colorado Springs, presented to the Museum 1,200 negatives and prints forming a pictorial survey of Iraq. Five albums of these prints were added to the Department files. The Museum now possesses one of the finest existing series of photographs of Iraq and her peoples.

Dr. Henry Field, of Chicago, contributed ethnological specimens from Syria and Iraq, pottery from Petra, Trans-Jordan, and prehistoric artifacts from the type Mousterian station at Spy, Belgium.

CATALOGUING, INVENTORYING, AND LABELING—ANTHROPOLOGY

During the year, 20 of the 27 new accessions were entered, as well as all or part of 55 previous accessions.

The number of catalogue cards prepared during the year totaled 7,974, and 7,500 cards were entered. Since the opening of the first inventory book, the total number of catalogue cards entered is 226,495.

For the current year, the distribution of catalogue cards was as follows: North and South American archaeology and ethnology, 294; Chinese, Japanese, Tibetan, and Korean archaeology and ethnology, 212; African ethnology, 49; Near Eastern archaeology, 194; Melanesian and Polynesian ethnology, 361; physical anthropology, 6,864.

From copy prepared by members of the Department, the Division of Printing issued 962 labels (1,985, if duplicates are included) for use in exhibition cases. Distribution was as follows: North and South American archaeology and ethnology, 176; African ethnology, 2;

Melanesian and Polynesian ethnology, 516; Near Eastern archaeology, 197; Chinese archaeology, 52; European archaeology, 19.

The Division of Printing also supplied 119 captions for photographs, 64 maps, 8,485 catalogue cards, and 228 shelf labels for storerooms.

In the Departmental albums, 5,263 additional photographs were mounted. This necessitated opening new albums. About 8,074 prints in the library of racial type photographs of the peoples of the world were checked.

Cataloguing and rearranging of ethnological specimens from Europe and southwestern Asia were completed.

A collection of jewelry and ornamental stones, chiefly from the Kabyles of North Africa, was catalogued. New labels were prepared, and about one hundred of the best samples are now ready for incorporation in a larger collection which will be installed in a room showing gems and personal ornaments from many parts of the world (H. N. Higinbotham Hall—Hall 31).

INSTALLATIONS AND REARRANGEMENTS—ANTHROPOLOGY

Hall K, the new Hall of Babylonian Archaeology, was completed and opened in August under the direction of Mr. Richard A. Martin, Curator of Near Eastern Archaeology.

The exhibits are made up of thousands of objects excavated from Kish, for four thousand years an important city of ancient Babylonia. It is located in Iraq, east of Babylon. The excavation was done over a period of ten years by the Field Museum—Oxford University Joint Expedition to Mesopotamia. The staff of the late Professor Stephen Langdon, of Oxford, composed of archaeologists from Great Britain, France, and the United States, supervised the excavating and laboratory research. Hundreds of native laborers performed the actual digging. Ever since the termination in 1933 of ten years of field work, efforts and time have been directed towards reconstruction and preparation of the material selected for exhibition. This hall represents the longest period of civilization which has been reconstructed by Field Museum. From the pottery, sherds, statuary, tablets, bronze work, and building materials recovered it has been possible to identify this ancient city and recount its history.

One of the important exhibits is the reconstructed gateway of the Sasanid period. Curator Martin reconstructed this portal at

the Museum, using wherever possible the original stucco from the royal buildings. Other interesting and valuable features are the earliest chariot wheels ever found; the miniature reconstruction of a chariot complete with horses and riders; and a frieze of seal reproductions. The frieze illustrates the high attainments of the glyptic artists of the Near East. In order to illustrate the history of this art from 3200 B.C. to A.D. 350, Curator Martin selected, for enlarged reproduction, impressions from eighteen cylinder seals and six stamp seals. These impressions, magnified twenty-five times by projection, were modeled in clay from the projections, and then cast in plaster with the help of the Federal Art Project of the Work Projects Administration. The resultant reproductions have been made into the frieze, for which special illumination is provided. The scale for these reproductions is such that the most minute details are clearer (even when viewed at a distance of twenty feet) than they are on the originals when examined with a hand lens. The impressions depict nearly all of the life of the times, with emphasis on the mythological aspects.

During the year it was decided to dismantle the old installation of jewelry in H. N. Higinbotham Hall (Hall 31) in order to catalogue and rearrange some 2,500 specimens. These include materials from Peru, India, Arabia, North Africa, Egypt, Rome, and Syria. The plan is to install them in new, well-lighted cases. When completed in 1941, this will be one of the leading exhibits of its kind in the country.

A case of archaeological specimens from the Lowry Ruin, Colorado, was prepared by Mr. John Rinaldo, Associate in Southwestern Archaeology, under the direction of Dr. Paul S. Martin, and placed in the Hall of Archaeology and Ethnology of the Southwestern United States (Hall 7). One side of the case shows the artifacts from Lowry Ruin in Southwestern Colorado. They are grouped in panels, each panel illustrating a different activity of the prehistoric inhabitants, such as building houses, hunting, and holding a ceremony. The objects in each panel are grouped around a water color picture illustrating the activities in which they were used. The other side of the case shows the progressive development, in stone and bone artifacts, of the Pueblo culture from Basket Maker times to historic times. The objects are grouped together on a panel, period by period, thereby showing the lineal sequence or "life history" of each type of artifact shown.

The Department prepared a case of materials illustrating the growth and development of writing for a special event at the Rotary

Club. In this display were an early Babylonian contract and other documents written in hieroglyphics on clay.

The Egyptian mummy of a man named Harwa was prepared for the second season of display in the General Electric X-ray Corporation's exhibit at the New York World's Fair. A representative collection of Sasanian material was sent to the Exhibition of Persian Art in New York.

A case of rare wooden figures was lent to the American Negro Exposition which was held in the Coliseum in Chicago from July 1 to September 1. The specimens were collected by Curator Wilfrid D. Hambly.

The Museum lent a small fragment of a Roman iron scythe (dated as first century after Christ) to the Republic Steel Corporation for the purpose of helping that company to find out whether case hardening was known to the Romans and, if so, how it was accomplished.

At the request of the Department of Arts and Crafts of the United States Department of the Interior, the Museum lent to the Museum of Modern Art, New York, eighteen rare specimens representing excellent examples of Indian Art.

A collection of North American ethnological specimens was lent for three months to the University of Minnesota Art Gallery for a special exhibit of primitive art.

The total number of specimens restored and repaired during the year is 286. Two skilled technicians, Mr. Tokumatsu Ito and Mr. John Pletinckx, have restored Southwestern pottery specimens excavated by the last expedition to New Mexico, a Chinese coffin grille, and many pieces of pottery that have been placed on exhibition in Hall K.

Cases have been readjusted and relabeled where necessary. Four storerooms have been checked and many thousands of specimens identified. Glass in the exhibition cases of Hall J, the Hall of Egyptian Archaeology, has been thoroughly washed.

In addition, work on the geographical-subject index of this Department's specimens has continued throughout the year. Two-thirds of the North American ethnological material is now in its final index-form and is available for use. The utilitarian value of the index has already been proved by its efficiency in supplying information to members of the Departmental staff. Furthermore, representatives from other museums have pronounced it a definite advancement in the field of scientific cataloguing.

DEPARTMENT OF BOTANY

EXPEDITIONS AND RESEARCH

In continuation of the Museum's botanical exploration in Guatemala, reported in 1939, Dr. Julian A. Steyermark, Assistant Curator of the Herbarium, who arrived there in October, 1939, remained until May, 1940. He was accompanied by Mr. William H. Coibion, a University of Illinois student, as volunteer assistant. They visited a great number of localities in which botanical collections had never been made. Dr. Steyermark succeeded in amassing some 11,000 numbered collections containing 25,000 specimens which, though yet imperfectly studied, have shown conclusively that the flora of Guatemala is still inadequately known. The Museum's efforts to contribute to the knowledge of it are proving decidedly valuable: several new genera, hundreds of new species and, especially, new extensions in the known distribution of hundreds of plants, not only of Guatemala but of North and South America as well, point to the far-reaching scientific importance of this endeavor. Typical of such "range" extensions, and of interest to many readers of this Report, was the discovery of the partridge berry—a plant of the northern and eastern United States and familiar in the Indiana Dunes—for the second time south of the United States.

The wealth of plants in Guatemala is not altogether surprising, for conditions in some of the regions where Dr. Steyermark collected practically duplicate those of other lands. Thus, for example, extensive cloud forests in the Sierra de las Minas, never before ascended by a botanist, proved to be a natural habitat for some high Andean as well as North American plants.

Making its headquarters in strategic places, the party explored many types of terrain, including several volcanoes, notably the magnificent Tajumulco, which rises to 11,000 feet above San Sebastian. The slopes of these great mountains are cut by hundreds of streams. Associated with them are steep thousand-foot gorges and cliffs which make exploration very difficult, for frequently one has to travel several miles in order to ascend or descend. Through the generosity of Professor Ulisses Rojas, of Guatemala City, excellent headquarters were provided at Finca Pirineos for collecting the flora of this volcanic region. Likewise, through the courtesy of Don Erich Zoller, of the Central American Plantations, hospitality was provided at Finca El Porvenir. Dr. Steyermark explored the jungles along the Atlantic coast and the mountains adjacent. These areas contributed largely to the knowledge of the relationship of

floras of other Central American countries—Honduras, British Honduras, and Costa Rica. The expedition yielded an unusually large number of specimens of palms, orchids, bromeliads, and ferns. In addition, several hundred collections of seeds and living specimens of ornamental or interesting plants were brought back as a contribution to the Garfield Park and other Chicago Park District conservatories. Some of these plants have already been displayed or have been used otherwise to supplement the botanical collections there.

The botanical exploration in Guatemala is being continued into 1941 by Mr. Paul C. Standley, Curator of the Herbarium, who left Chicago late in September. During the three months already passed in the field, he has made extensive collections in eastern Guatemala. These have resulted thus far in more than 5,000 numbered collections, with some 10,000 specimens. The rainy season made conditions unusually favorable for collecting.

Mr. Llewelyn Williams, Curator of Economic Botany, was granted an extension of his leave of absence to permit the continuation of his botanical explorations in Venezuela as aide to Dr. Henry Pittier, Chief of the Botanical Service of the Venezuelan Ministry of Agriculture. During 1940 Mr. Williams made excursions to the coast range above Caracas, where a large tract of forest land in the state of Aragua is set aside as a national park. He also visited many other areas along the north coast. However, as in the previous year, his principal investigations were in the region south of the Orinoco. At the end of October Mr. Williams returned to resume his work at Field Museum. An article based on his observations of last year, entitled "Botanical Exploration in the Middle and Lower Caura, Venezuela," was published in the June number of *Tropical Woods*.

Material and data on inter-tidal vegetation, tide pools, and other details necessary for the preparation of a north Atlantic coast habitat group of marine algae were collected by Emil Sella, Chief Preparator of Botanical Exhibits, on a field trip to the Maine coast. The collections supplement those made by a previous expedition to Maine and the Bay of Fundy. A number of localities were visited, some as far south as Bar Harbor, but most of the collecting was done on the shore of Quoddy Head near Lubec in the Bay of Fundy. This is the easternmost point within the borders of the United States. The tidal range on this coast is from twenty-three to twenty-five feet, and Mr. Sella found the low tide period ideal for working during the best part of the day.



POTATO PLANTING IN PERU

The ground is prepared by turning the sod by means of the handplow, a primitive agricultural implement still in common use in the Andes
One of the series of murals by Julius Moessel in the Hall of Food Plants (Hall 26)

In the phanerogamic herbarium there have been mounted and distributed 38,431 sheets of specimens and photographs. More than 2,680 typewritten descriptions of plant species, prepared in the Department or received in exchange, also have been added. These descriptions, when available in the study series, facilitate determination and study of new or old material. Work of mounting current collections has been kept well up to date, and at the end of 1940 only a relatively small quantity of material awaited preparation. The filing of new accessions to the Herbarium kept pace with the mounting, making new collections immediately available for use. Many hundreds of new covers for genera and species were prepared, and the alphabetical and geographical filing was checked and corrected in many groups. The purchase of twenty new metal herbarium cases provided considerable space for expansion and for some desirable rearrangement. In the cryptogamic herbarium the addition of two new eight-door metal cases furnished much needed space for filing the material recently acquired. New specimens were mounted as soon as they were received. An inestimable amount of help in writing labels, packeting specimens, filing herbarium sheets, determining species, and preparing duplicate material for exchange was given by Mr. Donald Richards, of the Hull Botanical Laboratory, University of Chicago. Other assistance in determination of specimens, chiefly in the collections of fungi and lichens, was given by Mrs. G. B. Stifler, also of the Hull Botanical Laboratory, and Dr. V. O. Graham, President of the Illinois Academy of Sciences. The project of repackaging the older specimens and of mounting each upon a single sheet has been continued from previous years, and at the end of 1940 the entire algal and moss collections had thus been renovated.

During the past year, 9,496 prints, from the negatives of plant type specimens obtained in European herbaria by Associate Curator J. Francis Macbride, were supplied to botanists of North and South America at cost, or in exchange for similar type photographs or for specimens desired by Field Museum.

As usual, many plants were submitted to the Department during the year for study and determination. Numerous local specimens were brought to the Museum for naming by residents of the Chicago region, and hundreds of inquiries regarding the most varied aspects of botanical science were answered by letter, telephone, and interview.

Throughout the year the collections of the Department were consulted by visiting botanists from near and remote parts of the

United States, and from several foreign countries. Much use has been made of them by scientists and students from the educational institutions in or near Chicago, or elsewhere in Illinois and neighboring states. A number of students of the algae and bryophytes thus worked in the cryptogamic herbarium for periods of a week or more each during 1940. Mr. Donald Richards, of the University of Chicago, spent a considerable part of the year studying the collections of bryophytes. Mr. J. C. Strickland, of the University of Chicago and the University of Virginia, devoted the period from March until June to a study of the Nostocaceae. Mr. Richard Wood, of Northwestern University, was engaged in work on the Characeae. Dr. G. W. Prescott, of Albion College, visited the Museum for ten days in October to consult the cryptogamic herbarium in his work on the plankton algae of Wisconsin. Miss Cécile Lanouette, of the University of Montreal, studied the Myxophyceae during the month of December. Mr. William A. Daily, of the University of Cincinnati, was at the Museum for ten days in August working jointly with Dr. Francis Drouet, Curator of Cryptogamic Botany, on a revision of the Chroococcaceae.

Publications of the Department of Botany during 1940 were as follows: Botanical Series, Volume 9, No. 4, *Flora of the Aguan Valley and the Coastal Regions near La Ceiba, Honduras*, by T. G. Yuncker, and No. 5, *Studies of the Vegetation of Missouri—I*, by Julian A. Steyermark; Botanical Series, Volume 21, *Travels of Ruiz, Pavón, and Dombey in Peru and Chile (1777–1778)*, by Hipólito Ruiz, with an Epilogue and Official Documents added by Agustín Jesús Barreiro (translation by B. E. Dahlgren); Volume 22, six numbers (all devoted to flowering plants most of which were recently collected in Guatemala), respectively, Nos. 1, 2, and 3, *Studies of American Plants—IX, X, and XI*, by Paul C. Standley; Nos. 4 and 5, *Studies of Central American Plants—I and II*, by Paul C. Standley and Julian A. Steyermark, and No. 6, *A New Genus of Compositae from Northwestern Alabama*, by Earl Edward Sherff.

Early in the year, the *Spring Flora of Missouri*, by Assistant Curator Steyermark, was published jointly by the Missouri Botanical Garden, of St. Louis, and Field Museum. It includes descriptions and illustrations of each of the 1,400 species of plants which bloom before June 1. Most of the keys to families, genera, and species are illustrated, thus facilitating their use. About two-thirds of the drawings were made by artists of the Work Projects Administration. The staff contributed numerous signed articles and brief notes to *Field Museum News* and to *Tropical Woods*, and supplied informa-

tion for numerous newspaper articles. Curator Standley and Assistant Curator Steyermark published during the year many short papers dealing with plants of the United States and tropical America.

Botany Leaflet No. 25, published toward the end of the year, is entitled *The Story of Food Plants*, and contains plates reproducing the seventeen mural paintings in Hall 25 by Julius Moessel (text of the leaflet is by Chief Curator B. E. Dahlgren).

ACCESSIONS—BOTANY

In 1940 there were received in the Department of Botany 345 accessions, comprising about 80,000 items. The accessions included material for the wood and the economic collections, as well as for the exhibits and the Herbarium. Classified by sources, 14,057 came as gifts, 16,936 in exchanges, 8,057 as purchases, and 41,173 were obtained by Museum expeditions. Included also are 554 photographic prints transferred from the Museum's Division of Photography.

Of the total receipts, items for the herbaria amounted to more than 76,545, including plant specimens, photographs, typed descriptions, and type negatives. The largest accession of the year consisted of approximately 25,000 specimens collected in Guatemala by Assistant Curator Steyermark, as described upon a preceding page. Among other material gathered by members of the Department staff were 2,538 specimens from Missouri, obtained by Assistant Curator Steyermark; 15,000 plants of the United States and Mexico, collected by Curator Drouet and Mr. Donald Richards; 752 Florida and Illinois plants, collected by Curator Standley, and 455 Venezuelan plants, collected by Curator Williams.

The largest of the exchanges received during the year consisted of 2,958 specimens forwarded from the Herbarium of Arnold Arboretum at Harvard University. This collection consists of woody plants from many parts of the world.

Other important exchanges received during 1940 include 1,470 specimens of Bolivian plants, from Mr. B. A. Krukoff, of the New York Botanical Garden; 1,273 plants of the southwestern United States and Lower California, from the National Arboretum, Washington, D.C.; 1,024 plants of North and South Carolina, and 440 of Virginia, from the Gray Herbarium of Harvard University; 555 specimens of Chinese plants from the Arnold Arboretum, Jamaica Plain, Massachusetts; 100 specimens of Argentinian plants from Universidad Nacional de La Plata, Instituto del Museo, La Plata, Argentina; 346 specimens of plants from the western United States

and Panama, from the Missouri Botanical Garden, St. Louis; 248 South American plants from the United States National Museum, Washington, D.C., and 261 Mexican plants from the Dudley Herbarium, Stanford University, California.

Gifts of phanerogamic material consisted of 11,212 items, and included much of the most valuable material that reached the Herbarium during the year. Outstanding among them was a series of 2,200 specimens of Peruvian and Bolivian plants, presented by Dr. T. W. Goodspeed, of the Department of Botany, University of California, at Berkeley. This collection consisted of plants collected on the University of California's Second Botanical Expedition to the Andes. Other South American collections received by gift included 484 Venezuelan plants collected by the Rev. Padre Cornelio Vogl, Caracas; 248 specimens of Venezuelan and Colombian plants from Brother Elias, Caracas; 171 Colombian plants from Brother Apolinar-María, Bogotá; 87 specimens of Brazilian plants from Professor José Badini, Minas Geraes; and 88 specimens of Argentinian plants collected by Mr. Arturo E. Ragonese, Santa Fé. A large amount of Central American and Mexican material was received during 1940. Among gifts may be mentioned 960 Mexican plants presented by the collector, Mr. Ernest G. Marsh, Jr., Victoria, Texas; 55 Guatemalan specimens from Dr. J. R. Johnston, Chimaltenango; 123 Guatemalan specimens from Don José Ignacio Aguilar G., Guatemala City; 138 specimens from British Honduras and Puerto Rico, from Mr. B. A. Krukoff, New York Botanical Garden; 70 Guatemalan specimens from Mrs. B. B. Lewis, Guatemala City; 189 Costa Rican specimens from Museo Nacional, San José, presented through the Director, Professor Juvenal Valerio Rodríguez; and 125 Mexican plants from the Department of Botany, University of Texas, Austin. Among gifts of plants collected in other areas are 217 specimens, chiefly Hawaiian, from Dr. Earl E. Sherff, Chicago; 67 specimens of Panamanian plants, from Miss Dotha Seaverns, Bennington, Vermont; 214 Tennessee and Ohio plants from Mrs. Alice S. Roberts, Chicago; 140 Indiana and Minnesota plants from Mr. Donald Richards, Chicago; 129 Texas plants from Mr. George L. Fisher, Houston, Texas; 239 Illinois plants from the Illinois State Museum, Springfield; 121 New Mexican specimens from Sister M. Marcelline Horton, Grand Rapids, Michigan; 108 Illinois and Wisconsin plants from Mr. Hermann C. Benke, Chicago; and 626 Illinois and Missouri plants from Mr. Bill Bauer, Webster Groves, Missouri.

To the cryptogamic herbarium 23,871 specimens were added during 1940. These consist largely of algae and mosses, partially



BEE SWARM ORCHID

(*Cyrtopodium punctatum*)

A reproduction of a large epiphytic orchid of the American tropics, recently added to the exhibits in Martin A. and Carrie Ryerson Hall (Hall 29, Plant Life)

of hepatics, fungi, and lichens. The largest accession was of about 12,500 cryptogams collected by Curator Drouet and Mr. Donald Richards in the Mexican state of Sonora, and in New Mexico, Arizona, and California on the Field Museum Expedition to Sonora and Southwestern United States (1939-40). Some 2,000 mosses and algae came from the Sewell Avery Expedition to Guatemala (1938-39), and from Florida in 1940, all collected by Curator Standley. Further collections were made by members of the staff in the vicinity of Chicago. Several thousand cryptogams, mostly algae, collected by Dr. Drouet in Massachusetts and Maryland in July, have not yet been accessioned.

Many gifts came from individuals. Mr. Donald Richards, of Chicago, contributed 945 specimens, mainly bryophytes of Minnesota, Illinois, and Indiana. From Mr. William A. Daily, of Cincinnati, came 373 specimens of the Chroococcaceae of Ohio, Indiana, and Kentucky. Dr. M. J. Groesbeck, of Porterville, California, who is engaged in a survey of the hot springs and alkali flats and lakes of eastern California and western Nevada, sent 253 specimens of algae. An additional 225 specimens of the algae of Burma were accessioned from Dr. L. P. Khanna, of Rangoon. From Professor William Randolph Taylor, Ann Arbor, Michigan, were received 138 specimens of Myxophyceae. Dr. George J. Hollenberg, Redlands, California, sent 107 specimens of Myxophyceae of California. Eighty-eight specimens of Canadian Myxophyceae from the Province of Quebec came from Dr. Jules Brunel, of Montreal. Mr. Hermann C. Benke, Chicago, contributed 83 specimens of cryptogams of Wisconsin. Dr. G. W. Prescott, Albion, Michigan, made a gift of 76 algae of the Canal Zone and Wisconsin. Mr. Lawrence J. King, of Richmond, Indiana, presented 69 algae of Wayne County, Indiana; Dr. Herman Kleerekoper, of São Paulo, 45 algae of Brazil; Mr. James R. Hurt, of Columbia, Missouri, 44 algae of Missouri; and Miss Barbara Willis, of Bennington, Vermont, 42 mosses of the Canal Zone.

The largest collection received by gift, but not yet prepared for accessioning, is a complete set of the several thousand numbers of Myxophyceae in the herbarium of the late Professor Nathaniel Lyon Gardner, of the University of California. One set of specimens of this collection is to remain at the university, and the duplicate sets are to be distributed from Field Museum.

A considerable portion, containing about 5,000 specimens, of the algal herbarium of the late Professor K. Okamura, of Hokkaido

University, was purchased in December from Dr. Shigeo Yamanouchi. It is hoped that these specimens, collected by the first great Japanese phycologist, will be made available for study at Field Museum some time in 1941. A large part of *Kryptogamen Badens*, of Jack, Leiner and Stizenberger, along with certain smaller sets of exsiccatae of cryptogams, was also purchased in 1940.

The algal herbarium of the late Professor W. A. Kellerman, of Ohio State University, consisting of 227 specimens from Guatemala, Ohio, and Europe, was placed in the cryptogamic herbarium of Field Museum through the courtesy of Dr. Clarence E. Taft and Mr. William A. Daily. This was acquired partially by gift and partially by exchange.

In exchanges, 291 specimens of algae and mosses were received from the New York Botanical Garden; 257 algae and bryophytes of California and the Pacific Islands from Dr. F. Raymond Fosberg, Arlington, Virginia; 252 Myxophyceae of the Philippines, collected by Dr. G. T. Velasquez, from the herbarium of the University of the Philippines; 145 algae of Montana, collected by Messrs. Fred A. Barkley and Stanley A. Ames, from the herbarium of Montana State University; and 110 Myxophyceae of Virginia, from Mr. J. C. Strickland, Charlottesville, Virginia. Field Museum sent in exchanges to various institutions, 1,471 specimens of cryptogams.

The study series of woods was increased considerably by material acquired mostly through exchange. The largest item, numbering close to 2,400 specimens, was received from Mr. B. A. Krukoff, of New York, as part payment for a complete set of photographs of type herbarium specimens. This includes more than seven hundred samples collected by Mr. Krukoff on his fifth expedition to the Brazilian Amazonia in 1934-35; approximately eight hundred numbers assembled in the same general region during 1936-37; a set of 385 specimens from the Bolivian Amazonia; 261 hand samples from the Sultanate of Asahan, Sumatra, Dutch East Indies; and a duplicate set of the material collected in 1929 by Mr. G. Proctor Cooper III in Liberia, West Africa, for Yale University School of Forestry.

Several hundred study specimens were received from the Botanical Service of the Ministry of Agriculture of Venezuela. These were collected by Curator Llewelyn Williams during his botanical explorations of the National Park, State of Aragua, and on his recent expedition to the region south of the Orinoco. Through the generosity of Señor Joaquín Avellan, of Caracas, the Museum received

nine panels suitable for exhibition purposes, representing some of the most widely used woods of Venezuela.

Mr. F. A. McClure, Curator of Economic Botany for the Lignan Natural History Survey and Museum, contributed 85 hand specimens of Chinese wood. Mrs. B. B. Lewis, of Guatemala City, gave 22 samples.

To the economic collections Dr. Elizabeth Bacon, of Seattle, Washington, and Captain W. J. Moody, of the British Legation at Peshawar, India, contributed 107 specimens of plant drugs sold in the markets of Meshed, Persia, and Kabul, Afghanistan. Other material received included samples of beans from Mr. Clayborn Wayne, State College of New Mexico; fruits of the ivory palm (*Hyphaene*) from Victoria Falls, Southern Rhodesia, donated by Mr. Robert B. Dickinson of Lake Forest, Illinois; and 73 specimens of fruits, seeds, oils, and palm material collected in Venezuela by Curator Williams.

The total of numbered specimens in the botanical collections at the end of the year 1940 was 1,067,247.

CATALOGUING, INVENTORYING, AND LABELING—BOTANY

During 1940 there were distributed in exchange to institutions and individuals in North and South America, and Europe, 91 lots of materials, totaling 9,917 items, including herbarium specimens, wood specimens, photographs, and typed descriptions of plants. Fifty-four lots of material, comprising 2,429 separate items, were received on loan for study or determination, and 119 lots, comprising 14,876 specimens, were lent for determination or for use in monographic studies.

Hundreds of index cards were typed for the study collection of woods, and all the wood specimens received during the year were stamped with the collector's catalogue number. Typed copies were also made of field notes to accompany herbarium specimens.

For convenience in reference, specimens of economic plant material, fruits, seeds, fibers, etc., were selected from the large quantity of material stored in the lockers under the cases in the exhibition halls. When properly classified and arranged for convenient access they will constitute a ready reference collection.

INSTALLATIONS AND REARRANGEMENTS—BOTANY

In the exhibition halls of the Department of Botany the most notable additions were made in the Hall of Food Plants (Hall 25),

and in the Hall of North American Woods (Hall 26). In the former, ten new murals were added to those reported in 1939, increasing the total number to seventeen and completing the series now decorating three sides of the hall.

These paintings depict human activities concerned with the gathering, planting, and cultivation of Man's more important types of vegetable food, and the preparation, transportation, and commerce of foodstuffs. Two of the new murals are maps. One shows the ancient trade routes over which the products of the East were formerly brought to the Western World. The other shows the areas of origin of the principal cultivated food plants in the Old and New Worlds. The entire series thus constitutes a pictorial story of food plants and serves to enhance the interest of the botanical exhibits in this hall. These new murals, like those mentioned and figured in the previous year's Report of the Director, are the work of Mr. Julius Moessel, Chicago artist, well-known for his decorative paintings. Reproductions of the whole series have been published, with an accompanying text, in Botany Leaflet No. 25, *The Story of Food Plants*. An example is shown in Plate 16 of this Report.

The exhibits of North American trees and woods in C. F. Mills-paugh Hall (Hall 26) have been supplemented by the addition of many photographic transparencies showing forest types and woodland formations. Most of the photographs from which these have been made were obtained by loan and represent a selection from the vast number of negatives in the files of the United States Forest Service. A few are from the Museum's own files, and others have been obtained from individuals and associations such as the Save the Redwood League, *American Lumberman*, etc. Here, as in Hall 25, the presence of colored out-door scenes contributes greatly to the appearance of the hall and to the interest of the related specimens. A few of the installations of conifers in the northwest quarter of the hall were rearranged recently to provide a more orderly sequence.

In the Hall of Foreign Woods (Hall 27) several additions were made to existing installations. These include a splendid plank of "ipil," a Philippine wood, donated several years ago by Mr. Ralph A. Bond of Chicago, and a fine specimen of West Coast mahogany (*Swietenia humilis*), the gift of Mr. L. Lind Petersen, of Escuintla, Guatemala. From material received in 1937 from the Mexican government, and other sources, the exhibit of woods from Mexico was increased by the addition of an assortment of eleven species, mostly from the Isthmus of Tehuantepec. Other installations were Central



A SMALL FOSSIL DEER-LIKE MAMMAL

Skeleton and restoration of *Leptomeryx*, which attained only the size of a large jack rabbit. Collected from Oligocene deposits in the Bad Lands of South Dakota by a Museum expedition of 1905

Ernest R. Graham Hall (Hall 38)

American woods and four panels of East Indian woods, contributed by Ichabod T. Williams and Sons, New York, by Russel Fortune, Inc., Indianapolis, and by R. S. Bacon Company, Chicago; several full length panels of West African woods; and four European woods, Slavonian and Austrian oak, pearwood, and Turkish boxwood. In Martin A. and Carrie Ryerson Hall (Hall 29, Plant Life) the only additions made during the year were a ginger plant, reproduced by Artist-Preparator Milton Copulos, from a specimen of ginger grown in the Museum, and a large fruiting branch of a rose to illustrate a type of fruit hitherto lacking in the exhibit of the rose family. To the palm exhibits in Hall 25 there was added a reproduction of a handsome cluster of dates received a few years ago from the government experiment station at Tucson, Arizona. This reproduction is in large part the work of craftsmen working with the aid and under the supervision of Mr. Emil Sella, Chief Preparator of Exhibits, and Mr. Milton Copulos. The time and effort of the preparators of botanical exhibits have been devoted throughout the year mainly to work on new plant habitat groups for Ryerson Hall.

DEPARTMENT OF GEOLOGY

EXPEDITIONS AND RESEARCH

An expedition led by Mr. Paul O. McGrew, Assistant in Paleontology, spent four months collecting fossil mammals from the lower Miocene deposits of South Dakota and western Nebraska. The extensive series of specimens secured include two skeletons of a small gazelle-like camel, *Stenomylus*, and ten skulls and a large number of other bones of the primitive deer *Aletomeryx*. A rich microfauna of extinct rodents (Aplodontioidea, Geomyidae, and Heteromyidae), containing at least two new genera and several new species, was also obtained.

Bones of the giant fossil sloth *Megalonyx* were collected by Mr. Bryan Patterson, Assistant Curator of Paleontology, and Mr. James H. Quinn, Assistant in Paleontology, at London Mills, Illinois. Although far from a complete skeleton, and not to be compared in this respect with the giant sloths collected by the Marshall Field Expeditions to South America, it is much more complete than any of the other specimens of the genus found in Illinois.

Mr. Sharat K. Roy, Curator of Geology, spent three months collecting specimens relating to physical geology. During this time, eighty-five localities in nine states—Nebraska, South Dakota, Colorado, Wyoming, Virginia, New Jersey, Connecticut, New York,

and Massachusetts—were visited, and several hundred specimens were collected. The specimens were carefully selected as to size and shape so that every one is usable for exhibition, if needed. They represent the work of ground water, the erosional work of running water, rock weathering, many forms of deformation of the rocks of the earth's crust, and various phases of metamorphism. During the last week of September Mr. Roy was assisted by Mr. Henry Herpers, Assistant Curator of Geology.

Mr. Bryant Mather, Assistant Curator of Mineralogy, spent about three months in the field in Maryland, Pennsylvania, Virginia, and West Virginia, making geological studies with special reference to structural analysis. The area studied contains the geological unit that forms the transition from the highly metamorphosed rocks of the Piedmont to the east and the more gently folded sedimentary rocks of the Shenandoah or Cumberland Valley and the Appalachians to the west. In connection with his studies, Mr. Mather made a sizable collection representing structural and dynamic geology. Most of these specimens are for study purposes, but some are suitable for exhibits and will be used in the reinstallations of physical geology exhibits in Clarence Buckingham Hall (Hall 35) now under way.

Assistant Curator Patterson spent three weeks in the American Museum of Natural History, New York, the United States National Museum, Washington, D.C., and the Museum of Princeton University, making studies and comparing specimens. In Museum publications there appeared two papers on South American fossil mammals by Mr. Patterson, and he is preparing five others. An article of his on fossil collecting appeared in the *Chicago Naturalist*.

Mr. McGrew wrote a paper, now in press, on a Miocene lagomorph for the Museum publications. Also, in collaboration with Dr. Everett C. Olson, of the University of Chicago, he prepared a paper on a Pliocene mammalian fauna from Honduras which will appear in the *Bulletin of the Geological Society of America*.

A paper describing a fossil turtle from Arkansas, by Karl P. Schmidt, Curator of Amphibians and Reptiles, was published in the Geological Series.

An article by Mr. Quinn, describing the use of rubber molds for making casts of fossils as perfected in the vertebrate paleontology laboratory, appeared in the Museum's Technique Series. Other articles on the subject by Mr. Quinn appeared in *Rubber Age* and *Museum News*, the latter a periodical published by the American Association of Museums. A leaflet on *Collection and Preservation of*

Fossil Vertebrates was prepared by Mr. Elmer S. Riggs, Curator of Paleontology, and is ready for publication.

Curator Roy spent the greater part of the year upon the completion of his memoir, *The Upper Ordovician Fauna of Frobisher Bay, Baffin Land*, which is now in press. This paper, based on his field work as a member of the Rawson-MacMillan Subarctic Expedition for Field Museum (1927-28) consists of the description and illustration of 116 species and the determination of their stratigraphic range. Of the species described, forty-two are new. The memoir is supplemented by a chapter, "Narrative of the Expedition with Notes on the Coastal Geology of Labrador and Baffin Land." This chapter has been introduced to maintain continuity of geological observations and to give the reader a bird's-eye view of the expedition as a whole.

The study of the fossils upon which the memoir is based reveals that no Black River or Trenton time is represented at the head of Frobisher Bay as previously reported, but all the strata therein present are of late Ordovician or Richmondian time. This conclusion clarifies a long-standing controversial phase of Arctic Ordovician stratigraphy.

The National Museum of Costa Rica, at San José, sent Field Museum a collection of varied geological specimens to be identified. All of these, except six fossil leaves which are now being studied by Dr. Ralph Chaney, of the University of California, were identified. The invertebrate fossils were identified by Dr. Otto Haas, formerly of Vienna, acting temporarily as a volunteer assistant. A paper by Dr. Haas, describing the fauna, is undergoing some revision and amplification before publication.

In the chemical laboratory four meteorites were analyzed by Assistant Curator Herpers. He also treated eighteen bronzes for the Department of Anthropology by the Fink process for curing malignant patina. None of the many specimens sent in for examination as possible meteorites proved to be meteorites. Numerous necessary qualitative analyses and microscopic studies were performed as usual. Also, 585 gallons of alcohol were purified for the Department of Zoology, and distilled water was provided as needed.

The equipment for sawing and polishing stone was, until August, in constant use, cutting and polishing the agates, fossil wood and other ornamental stones obtained by the Expedition to the Pacific Northwest (1938). When a supply of finished specimens ample for several years' needs had been accumulated, this work was discontinued, and the saw was put to use cutting to exhibition

size and shape the many specimens illustrating physical geology collected in 1940.

In the vertebrate paleontology workrooms molds were made from a plastic rubber mixture introduced and perfected by Assistant Quinn, and series of casts were made by this method from specimens of *Mesembriornis*, *Barylambda*, *Haplolambda*, *Sparactolambda*, *Bathypsoides*, *Hippidium* and *Aepyornis*. Copies of these casts were sent to ten museums by exchange, sale or gift. In return for the exchanges, many casts valuable for study and research were secured.

Plaster models were made of the primitive deer-like animal *Leptomeryx*, of the Miocene camel *Oxydactylus*, of the armored mammal *Glyptodon*, and of the great sloth *Megatherium*. These figures, all but one in miniature, are intended to supplement exhibits of fossils.

ACCESSIONS—GEOLOGY

The Department of Geology recorded during the year seventy-two accessions which included 890 specimens. Classified by sources, 516 came as gifts, 50 were from exchanges, 298 were from expeditions or were otherwise collected by members of the staff, and 26 were purchased. These figures do not include the three collections, estimated to contain more than a thousand specimens, from the expeditions conducted by Curator Roy, Assistant Curator Mather, and Assistant McGrew. The unpacking and classifying of these is under way, but has not advanced to the stage of accessioning and cataloguing. No large collections were received by gift or purchase. Additions to the mineral collection, while not numerous, were important because they added many mineral species previously either lacking or poorly represented. Of these, the following are worthy of special mention: mazapilite and dussertite from Mapimi, Durango, Mexico, the gift of Mr. Francis Wise, of Colorado Springs, Colorado; dahllite, presented by Mr. O. J. Salo, of Red Lodge, Montana; shortite from Wyoming, the gift of Mr. Bryant Mather, of Chicago; ferritungstite, presented by Miss Ann Trevett, of Caspar, Wyoming; clinozoisite and thinolite, received from Dr. M. J. Groesbeck, of Porterville, California; chialtolite in the form of two plaques of transparent sections of crystals from Australia and Massachusetts, the gift of William B. Pitts, of Sunnyvale, California; and a small gem opal of fine quality, mounted in a silver band, presented by Mr. H. W. Plantz, of Chicago.

The meteorite collection was increased by the purchase of twenty-three specimens of meteorites not before represented. Another

interesting addition was a meteorite which came from near the Odessa meteorite crater, presented by Professor Lincoln La Paz, of Columbus, Ohio. It has special interest because it was excavated from a bed of limestone. The tektite collection, temporarily placed with the meteorites until the true nature of these puzzling objects is determined, was increased by the addition of seven specimens. Six of these are tektites presented by Mr. R. Schaap, of Batavia, Netherlands East Indies, and one is a fragment of Darwin glass obtained by an exchange with Mr. John D. Buddhue, of Pasadena, California.

The more important additions to the vertebrate fossil collection came from the Expedition to South Dakota and Nebraska, and are mentioned elsewhere.

Professor Arnim D. Hummel, of Richmond, Kentucky, owner of the ground near London Mills, Illinois, in which a partial skeleton of the giant sloth *Megalonyx* was buried, presented the fossil to the Museum. It was excavated by members of the staff. Other gifts of vertebrate fossils included nine fossil mammals, from Assistant James H. Quinn; a lower jaw of a fossil raccoon, from Mr. Grayson E. Mead, of Chicago; eighteen groups of fish teeth, from Dr. R. R. Becker, of Gainesville, Florida, and a skull of a fossil dog, from Mr. Robert G. Schmidt, of Homewood, Illinois.

The collections of rocks and physical and economic geology material were increased by important additions estimated to contain several hundred specimens from two expeditions conducted by Curator Roy and Assistant Curator Mather. These expeditions were not only eminently successful in their primary objective of obtaining specimens for the improvement of the physical geology exhibit, but they also obtained many specimens for the other collections of the Department. Forty-six miscellaneous specimens came from expeditions conducted by other Departments. Other accessions to the collections, which were fewer than usual, include eighty-nine specimens from fourteen donors.

CATALOGUING, INVENTORYING, AND LABELING—GEOLOGY

During 1940, there were 890 specimens catalogued in the Department's twenty-eight record books. All classified card catalogues have been kept up to date. The map catalogue, begun in 1939, is completed. A classified card catalogue of the gem collection in H. N. Higinbotham Hall (Hall 31) was made, and proved useful

in the preliminary stages of reinstallation of this hall. In all, the classified catalogues were increased by the addition of 4,258 cards.

Copy for 1,125 labels was prepared and sent to the Division of Printing. Labels installed numbered 1,264.

INSTALLATIONS AND REARRANGEMENTS—GEOLOGY

Changes in the mineral installation in Hall 34 were limited to some replacements of inferior specimens by better ones, and the addition of miscellaneous specimens received during the year. This collection, with its 32,000 specimens, now covers almost the entire range of mineral species and varieties. In the nearly forty-eight years of Field Museum's existence the number of specimens in the mineral collection has quadrupled, largely through the efforts of the late Dr. Oliver C. Farrington, former head of the Department, and the goal of complete representation has been ever more closely approached. Of the 824 distinct mineral species known in 1892, the original collection purchased at the time of founding the Museum included 491, and up to the beginning of 1940 there had been added 120 more. In 1940, examples of five more of these "original" mineral species, as well as of four other species not before represented, were added to the collection.

The meteorite collection was enlarged by the addition of twenty-four meteorites and eight tektites. Much of the interest in iron meteorites lies in the Widmanstätten figures, which are interlacing patterns of bands and lines developed on polished surfaces of the meteorites by etching with acid. Old methods of etching meteorites produced results much inferior to those obtained by applying the technique more recently developed in the laboratories of the United States National Museum. The figures on many of the older specimens are dull, often imperfect, and sometimes spotted with rust. A program of re-etching such meteorites as inspection shows can be improved, has been started, and twenty-four have been treated.

Revision and reinstallation of the exhibits of physical and economic geology and paleontology in Halls 35, 36, 37, and 38 continued. As this involves transfer of exhibits between the halls, reinstallation of all four is proceeding simultaneously. None of the halls have been closed, and although many cases have been emptied, it has been possible so to conduct the work that the major part of the exhibits always remains on display.

Installation of the improved physical geology collection which occupies the east half of Clarence Buckingham Hall (Hall 35) was

interrupted when early reports from collecting parties in the field indicated that material superior to any now in the collections will soon be available. These collections were received late in the year and the work of preparing them for exhibition was started. Many of the new specimens require cutting on the stone saw to a size and shape suited for exhibition. The large model of the Natural Bridge of Virginia was moved from Hall 34 to a better location in the corridor connecting Halls 35 and 36.

Reinstallation of the industrial mineral exhibit in Hall 36 continued during the first part of the year as fast as reconditioned exhibition cases became available. As the new installation includes much material transferred from Frederick J. V. Skiff Hall (Hall 37), a necessary condensation was made by transferring to the study collections specimens primarily of interest to specialists. There they remain available to those competent to profit by their study. It is believed that the new installation, although holding fewer specimens of most groups, will be of more general interest. Three and one-half cases of fluorite, barite, and sulphur were installed. Further installation was postponed to allow closer attention to preparations for reinstallation of the gem collection.

Removal from Hall 36 of overflow material from the industrial mineral exhibit (which formerly filled the west half of Hall 37) is nearly completed. This change provides space for the invertebrate paleontology exhibit, which is to be moved from Hall 38. Some of the exhibits were reinstalled in Hall 36, others were taken to the work-rooms for revision before reinstallation, and still others were transferred to the study collection. The marbles and building stones for which no space could be found in the new installation were retired.

In the ore collection (east half of Hall 37) one case of tin and antimony, and one case of rare metals were reinstalled.

The conversion of Ernest R. Graham Hall (Hall 38) from a hall of general paleontology into a hall of vertebrate paleontology, for which plans were made in the preceding year, was actively prosecuted throughout 1940. This required, besides preparation of new specimens and of specimens not before shown, remounting and re-finishing many of the older exhibits.

New exhibits include a skull of the large horned dinosaur *Anchiceratops*, and an unusually large skull of the swimming reptile, *Tylosaurus*. Skulls of the extinct mammals *Achaenodon*, *Dolichorhinus*, *Daphaenus*, and *Desmathyus* were prepared for exhibition, and a large number of other mammalian specimens were added to

the study collection. A skull of the fossil amphibian *Buettneria*, and shells of two large fossil turtles, were prepared and mounted for exhibition. More notable specimens are a skeleton of the giant beaver, *Castoroides*, and a skeletal restoration of the great South American carnivorous bird, *Mesembriornis* (Plate 20), both mounted by Assistant James H. Quinn. A large section from the famous bone deposit at Agate, Nebraska, was prepared under his supervision. A skeleton of the Pliocene camel *Procamelus* was prepared and mounted under the supervision of Assistant Paul O. McGrew.

Fossil skeletons remounted include one of the great South American armored mammal, *Glyptodon clavipes*, to which leg bones and pelvis were added to make an essentially complete specimen. The older collections of fossil fish-lizards, crocodiles, and plesiosaurs of the European Jurassic were refurbished; seven of the specimens were remounted, and all were installed in two cases with new labels. A case of Paleozoic and Jurassic fishes, and one of Cretaceous and Eocene fishes, were likewise gone over and reinstalled, as were two cases of Cretaceous swimming reptiles and flying reptiles, all under the supervision of Curator Elmer S. Riggs.

A new type of case without shelving, and with lower base and consequent enlarged exhibition space, has been adopted for Ernest R. Graham Hall (Hall 38). A new type of lighting also provides much more effective illumination for exhibits. In this new type of case, the exhibits enumerated above were installed.

Preparation for a complete reinstallation of the gem collection in H. N. Higinbotham Hall (Hall 31) occupied much of the time of the staff during the last four months of the year. The new installation will be in especially designed cases with improved illumination. Methods of display have been adopted which will bring out the full beauty of the gems in a manner impossible in the old installation. As no catalogue of the gems was available, and as many of the specimens are of great value and so small as to be easily mislaid, extraordinary means were taken to prepare and check a list of all specimens and to safeguard them from the time of dismantling the old collection until reinstallation.

Before the cases were opened a check list was made containing a description of each specimen with a copy of its label and such data as could be found in the records. All cut stones which could not be numbered without impairing their appearance were measured and weighed to the nearest milligram, and these figures recorded against the catalogue numbers assigned to them. It will always be possible



ALASKAN FUR SEAL ROOKERY

Scene at the breeding grounds on the Pribilof Islands

Taxidermy by C J Albrecht Background by Arthur G Rueckert

Hall of Marine Mammals (Hall N)

from these records to identify any gem that at some future time might accidentally become separated from its label. All other specimens were numbered and the numbers recorded. A card catalogue has been prepared from the check list, and as the cards contain records of the size of every specimen, it has been possible to mark on blue prints of the interior of the cases the place each specimen is to occupy in the new installation. The use of these plans will greatly expedite the actual installation when the cases are ready, and will allow the installation to proceed with a minimum of handling specimens.

Thirty-five sections of steel tray racks were placed in rooms 108 and 116 to provide increased accommodation for the study collections of physical geology and mineralogy. Over-crowding of the study collection has been relieved, and the collection is now in as good order as is possible until the contemplated increase of storage facilities becomes available.

DEPARTMENT OF ZOOLOGY

EXPEDITIONS AND RESEARCH

The Magellanic Expedition of Field Museum, sponsored by President Stanley Field, in 1940 completed the work in South America which it began in 1939. The party, led by Dr. Wilfred H. Osgood, Chief Curator of Zoology, included Mr. Colin C. Sanborn, Curator of Mammals, and Mr. John M. Schmidt, field assistant. The Chilean city of Punta Arenas, on the north side of the Strait of Magellan, was reached about the middle of December, 1939. Punta Arenas, headquarters for the expedition from December 15 to March 15, is the southernmost continental city in the world. Far removed from other parts of South America, and with a population of about 30,000, it is the metropolis of a little world of its own in a region devoted mainly to large scale sheep raising.

A two-ton Ford truck, purchased for the work in the Magellanic region, proved invaluable in transporting the party with its equipment and collections. A representation of the mammals from the great island of Tierra del Fuego (the "Land of Fire"), which is cut off from the mainland of South America by the Strait of Magellan, was the main objective of the expedition. Various collecting stations were established on the island, two in the far south on Lakes Fagnano and Yewin. Headquarters for a considerable stay were generously provided at the Reynolds' Ranch at Via Monte, and a short stop was made at Estancia Cullen, to the north. A very satis-

factory collection of mammals and birds was made at these localities, including series of the rare Scoresby's gull and of the sheathbill.

On the mainland, collecting was carried on at nine localities to the north and east of Punta Arenas, and within a radius of 200 miles. A comprehensive collection of all of the small mammals of the region was obtained, including all the forms known with the exception of a burrowing rodent, now apparently extinct. However, two specimens of a new species, representative of the form thought to be extinct on the mainland, were obtained on Riesco Island. In all, the collection includes 472 mammals, and is much the most extensive ever made in the Magellanic region, now especially important in view of the trend toward extinction of many forms under the alterations of soil and vegetation produced by the vast flocks of sheep. The collection includes also 155 birds and a few lizards of the southernmost form in South America.

Work ended the middle of March at the end of the brief Antarctic summer. Mr. John Schmidt returned to New York with the collections via the west coast. Dr. Osgood and Mr. Sanborn proceeded by steamer to Buenos Aires, whence Dr. Osgood returned to Chicago via the east coast of South America, visiting São Paulo, Brazil, en route, for a conference with Dr. Oliverio Pinto, Director of the Museu Paulista in that city.

Curator Sanborn spent two weeks in further collecting in Argentina, at Dorrego, near Bahía Blanca, and at Chimpay on the Río Negro. Returning to Buenos Aires, he took the train for Cochabamba, Bolivia, to examine collections offered for sale. After a short stop in La Paz, he crossed Lake Titicaca to Puno, Peru.

The work of the Magellanic Expedition in Peru during 1939 had defined certain geographic problems in the distribution of small mammals, and indicated desirable additional collecting stations in southern Peru. Collections of mammals, birds, and reptiles were made at Yunguyu and at Pocosani in the Lake Titicaca region, at Baños de Jesús above Arequipa, and at Chucurapi, a sugar plantation near the coast. At the latter place a remarkable bat, hitherto extremely rare in collections, was obtained in good series. The mammals collected in Peru in 1939 and 1940 total 633. The total number of mammals collected by the expedition is 1,419. Birds collected number 334, and reptiles and amphibians 1,694.

The Museum is greatly obliged to the personnel of the American embassies and consulates in Peru, Chile, Argentina, and Bolivia, for aid and advice to the Magellanic Expedition. In addition,

important assistance was rendered by Dr. Carlos Nicholson and Señor Fernando Lopez de Romano, of Arequipa, Peru; by Mr. George Hodgson, of Talca, Mr. Fred Turner, of Osorno, Mr. William Fell and his son, of North Arm Station, Mr. John Dick and Messrs. Greer and McLean, of Punta Arenas, all in Chile; by the Bridges, Reynolds, and Goodall families of Tierra del Fuego; and by Mr. Hal Hodges, of Buenos Aires, Señor José Maria Perez Bustos, of Bahia Blanca, and Señor Gaston Pawley of Chimpay, Argentina.

The Mandel Caribbean Expedition, led by Mr. Leon Mandel, of Chicago, and conducted aboard his yacht, the *Buccaneer*, was in the Caribbean region from January 1 to February 9, 1940. Messrs. Rudyerd Boulton, Curator of Birds, and D. Dwight Davis, Assistant Curator of Anatomy and Osteology, accompanied the expedition. By means of the *Buccaneer*, they were able to make collections of birds, mammals, and reptiles on remote and little visited islands, together with considerable collections of fishes, numerous invertebrates, a specimen of the rodent genus *Capromys* embalmed for anatomical study, and a specimen of the relatively rare Cuban crocodile.

The party visited Swan Island and the Bay Islands off Honduras, various islands off the coast of British Honduras, including Glover's Reef, Half Moon Cay and Turneffe Island, and Mujeres, Cancun, and Contoy Islands, off Yucatan. No opportunity was lost to obtain collections from these little-visited islands. The expedition, in addition to various lots of invertebrates, collected more than 500 fishes, 350 reptiles and amphibians, 150 birds, and 36 mammals.

A motion picture record of the Mandel Caribbean Expedition, in color film, was made by Messrs. Boulton and Davis. This includes especially interesting views of the nesting rookeries of sea birds on the islands visited, and slow motion flight pictures of various birds, especially of the frigate bird.

The year's publications in the Museum's Zoological Series include *A Tentative Classification of the Palearctic Unionids*, by Dr. Fritz Haas, Curator of Lower Invertebrates; *Notes on Texan Snakes of the Genus *Salvadora**, by Karl P. Schmidt, Curator of Amphibians and Reptiles; *A New Toad from Western China*, by Curator Schmidt and C. C. Liu, of West China Union University; *A New Venezuelan Honey Creeper*, by Emmet R. Blake, Assistant Curator of Birds; *A New Savannah Sparrow from Mexico*, by Sidney Camras, former aid in the Division of Birds; *Notes on the Anatomy of the Babirusa*, by D. Dwight Davis, Assistant Curator of Anatomy and Osteology; and *Studies of the Anatomy of the Extrahepatic Biliary*

Tract in Mammalia, by Stewart Craig Thomson, of Loyola University, Chicago. "Mammals from Iraq," by Colin C. Sanborn, Curator of Mammals, appeared as an appendix in *Anthropology of Iraq*, by Dr. Henry Field, of the Department of Anthropology.

Publications outside the Museum by the Department staff include seasonal reports on the bird life of the Chicago region in *Bird Lore*, by Rudyerd Boulton, Curator of Birds, and Assistant Curator Blake; a technical report on the amphibians of China, by Clifford H. Pope, Assistant Curator of Amphibians and Reptiles, and Dr. Alice M. Boring of Peking, and a book by Mr. Pope, *China's Animal Frontier*, an account in popular style of his travels as a museum collector. Dr. Fritz Haas published a paper, *Ecological Observations on the Common Mollusks of Sanibel Island*, resulting from Field Museum's Florida Expedition of 1939.

Thirteen signed articles were written for *Field Museum News* by various members of the Department.

Research activities of the staff not reflected in published work include continued studies on bats by Curator Sanborn, who has a taxonomic monograph of the family Rhinolophidae in preparation; a technical report on various malacological collections and specimens, by Curator Fritz Haas, ready for publication in the Museum's Zoological Series at the end of the year, and studies on Peruvian mollusks by Dr. Haas. In the Division of Birds, in addition to Curator Boulton's continued studies on African birds and especially on the birds of Angola, Assistant Curator Blake completed preliminary studies for his report on the birds of British Guiana based on the results of his expeditions in 1937 and 1938. He also collaborated with Mr. Harold Hanson, of the University of Wisconsin, in the preparation of a report on a collection of birds from Mexico.

The third and last part of Dr. Reuben Myron Strong's monumental compilation, *A Bibliography of Birds*, was submitted for publication in 1940, and should soon be available to students. Part III contains the subject index, with an average of three references to each title in the author catalogue.

Dr. Charles E. Hellmayr, Associate Curator of Birds, now resident in Geneva, Switzerland, continued his research on New World birds. The manuscript of that part of the *Catalogue of Birds of the Americas* dealing with game birds, completed in co-operation with Mr. Boardman Conover, Research Associate in Ornithology, is in press, and the completed manuscript of the last volume of the series has been received by the Museum.



GIANT CARNIVOROUS BIRD

Collected from Pliocene deposits of Catamarca, Argentina, by the Marshall Field
Paleontological Expeditions (1922-27)

Ernest R. Graham Hall (Hall 38)

In the Division of Amphibians and Reptiles, Curator Schmidt continued studies on the amphibians and reptiles of Central America and southwestern Asia, and the fossil representatives of the living orders of reptiles, preparing a paper for the Museum's Geological Series on a fossil turtle from Arkansas, with another publication well advanced on a Miocene alligator from Nebraska. In the Division of Insects, two papers by Assistant Curator Rupert L. Wenzel were ready for the press at the end of the year, and two further papers based on Field Museum material had been accepted for publication, one on termitophilous Diptera by Dr. Charles H. Seevers of the Central YMCA College, Chicago, and one on Mallophaga by Miss Theresa M. Clay, of the British Museum. In the Division of Fishes, Curator Alfred C. Weed agreed to prepare an account of the mullets for a comprehensive work on the fishes of the northwestern Atlantic, and made some studies in preparation. In the Division of Anatomy and Osteology, Assistant Curator Davis continued the accumulation of drawings and manuscript toward a comprehensive account of the anatomy of the giant panda based on the dissection of the famous "Su-Lin."

Various members of the staff attended scientific meetings during the year and engaged in studies at other museums. Chief Curator Osgood attended the Eighth American Scientific Congress in Washington in May, as the representative of the Museum. Curator Boulton and Assistant Curator Blake attended the meetings of the American Ornithologists' Union in Boston, and Mr. Boulton was re-elected treasurer and business manager of the Union. He gave an illustrated lecture on the Mandel Caribbean Expedition, and Mr. Blake read a paper on the birds of the Brazilian frontier of British Guiana. Curator Haas attended the meeting of the American Malacologists' Union in Philadelphia in June. Assistant Curator Davis visited several eastern museums in October to examine anatomical exhibitions, and to discuss his important work on the anatomy of the giant panda with colleagues engaged in similar studies.

ACCESSIONS—ZOOLOGY

The accessions for the year numbered 482, comprising a total of 41,756 specimens. Classified, these consisted of 1,621 specimens of mammals, 7,463 birds, 10,525 birds' eggs, 4,936 amphibians and reptiles, 6,487 fishes, 7,384 insects and related forms, and 3,340 lower invertebrates, the last mostly mollusks. Included in the above figures are 337 specimens of mammals, birds, and reptiles preserved for anatomical study or prepared as skeletons.

The accessions received as gifts include 21,775 specimens; by exchange, 435; from Museum expeditions, 12,021; and by purchase, 7,525. Notable gifts of mammals include two lots of Mexican mammals, 94 from Mr. E. Wylls Andrews, of Cambridge, Massachusetts, and 47 from Mr. Harry Hoogstraal, of Champaign, Illinois. Important also are gifts of 39 specimens from the Chicago Zoological Society, and three from the Lincoln Park Zoo.

Gifts accessioned in the Division of Birds include 11,923 specimens, of which 1,398 are birds and 10,525 are eggs. These come from thirty-eight individuals and institutions. The two large gifts of eggs include 9,869 from the Estate of C. K. Knickerbocker, Chicago, and 657 from Mr. Joseph M. Wells, of Chicago. Important gifts of birds include 272 specimens from the Chicago Zoological Society; 64 from Mr. Boardman Conover, Chicago; 732 from Mr. Melvin A. Traylor, Jr., Chicago; 26 from Mr. John A. Holabird, Chicago; and 44 from Mr. Bernard Bartnick, Chicago.

Gifts of reptiles and amphibians include an important collection from Yucatan made by Mr. E. Wylls Andrews and Mr. Melvin A. Traylor, Jr., resulting from an expedition financed mainly by them. Dr. Henry Field, Chicago, and Mrs. Robb White, Jr., Thomasville, Georgia, presented 115 specimens from Georgia and Florida. Numerous specimens were presented by the Chicago Zoological Society and the Lincoln Park Zoo.

The most important gifts among the accessions of fishes were a mounted Pacific black marlin, and a model of a large thresher shark, received from Mr. Michael Lerner, of New York. These specimens were collected in the course of an expedition to New Zealand and Australia.

A notable gift of insects, spiders, and scorpions was made by Padre Cornelio Vogl, of Caracas, Venezuela; 733 specimens, from both North and South America, were presented by Mr. Henry Dybas, of Chicago; 413 specimens of neotropical histerid beetles including six types and ten paratypes were added to the collection by Mr. Rupert L. Wenzel, Chicago; and Dr. Charles SeEVERS, of Chicago, presented 52 specimens, which include six types and six paratypes of new species of termitophilous flies from the neotropics.

A considerable gift of mollusks and other marine invertebrates came from Mr. Ben Cascard, of Gary, Indiana.

The study collections of the Division of Anatomy and Osteology have grown chiefly through the gift of specimens from the Chicago

Zoological Society. The Division co-operates closely with the Society's Brookfield Zoo, taking charge of animals after they die, and arranging for their best scientific use.

The collections received through Museum expeditions, including collecting of insect parasites from the collections of birds and mammals in the Museum's existing collections, amount to 12,021 specimens. Of these, the most important are the mammals, birds, reptiles, fishes, and various invertebrates from Chile, Argentina, and Peru, obtained by the Field Museum Magellanic Expedition. The Museum bore a minor share of the expense of an expedition to Yucatan by Messrs. E. Wylls Andrews and Melvin A. Traylor, Jr., whose large collections have been credited as gifts. The collections of birds, mammals, reptiles, fishes, and marine invertebrates made by the Mandel Caribbean Expedition amount to more than 1,000 specimens.

Exchanges were made during 1940 with the British Museum (Natural History), the Museum of Comparative Zoology, Cambridge, Massachusetts, and with various individuals. Purchases include noteworthy specimens from Mexico, the United States, and Bolivia for addition to the reference collection.

Through the fund established in memory of the late Leslie Wheeler, former Trustee of the Museum and Research Associate in the Division of Birds, 85 specimens of birds of prey were added to the collection. An additional 5,133 study skins from the Bishop Collection were received from Dr. Louis B. Bishop, of Pasadena, California, supplementing the 35,076 specimens received from this source in 1939.

CATALOGUING, INVENTORYING, AND LABELING—ZOOLOGY

The entries in the departmental catalogues for 1940 number 26,559, of which 2,127 are for mammals, 19,371 for birds, 2,565 for reptiles and amphibians, 157 for fishes, and 2,339 for lower invertebrates.

Storage space for the reference collection of mammals was increased by forty-one cases, eighteen in Room 76 and thirty-three in Room 78. A complete rearrangement of the collection, made possible by these additional cases, has been undertaken, and about half the work of relabeling the drawers and cases completed. The reattachment of the original labels to specimens received before 1908 has continued, and 975 such specimens have been relabeled. Other specimens labeled total 8,548 skins and 4,298 skulls in bottles and boxes. New index cards typed and old ones retyped total 5,647.

The catalogue entries for birds represent 19,086 skins, 220 skeletons, 19 alcoholic specimens, and 46 sets of eggs. The organization of the reference collection, involving the incorporation of the Bishop Collection and other recent large accessions, was a major activity of the Division of Birds in 1940. The assignment of ninety-four large specimen cases on the west gallery of the fourth floor to birds makes possible a complete rearrangement. The families of birds listed in the first two volumes of the *Check-list of Birds of the World* (Struthionidae to Alcidae) have been arranged in this space, while the remaining families (Pteroclididae to Fringillidae) occupy the cases on the third floor in Room 76.

The work of the Division was greatly advanced through the services of four volunteer assistants. Miss Sally Lawson, of Vassar College, worked full time from July to mid-September and finished sorting the Bishop Collection for the catalogues. Mrs. Herman Dunlop Smith, of Lake Forest, averaged two days a week in the Division throughout the year. Mrs. John A. Holabird and Miss Florence Cluett, both of Chicago, devoted several days each week to routine work during the latter part of the year.

A complete rearrangement of the reptile collection was undertaken by Assistant Curator Clifford H. Pope upon his arrival to join the staff of the Museum in June. This was made possible by the expansion of the storage and laboratory space of the Division of Reptiles mentioned in the 1939 Report. Many new labels for the cases, drawers, and bottles were made during the course of this work.

Newly catalogued specimens in the Division of Fishes were numbered, labeled, and placed on the storage shelves, together with a considerable number which were identified by Dr. Carl L. Hubbs, of the University of Michigan, during his several visits to the Museum.

In the Division of Insects, besides pinning, spreading when necessary, pin labeling, and distributing most of the specimens received, a number of butterflies, moths, and flies were transferred to new drawers. Much needed attention was given to specimens in alcohol, which were sorted, labeled, placed in more suitable containers, and arranged in systematic order, making them more accessible and useful. Spread and respread were 1,457 butterflies and moths, the old brass pins being replaced with japanned pins.

In the Division of Lower Invertebrates the principal activity for the year was also the arrangement of the collection in new cases on the fourth floor. In addition to the cataloguing of new material,



with 2,128 entries in the catalogue of mollusks and 211 in that for other invertebrates, 1,158 older entries were checked and the lots of specimens relabeled. In the course of unpacking the collections from storage in the basement of the building, several collections of scientific importance have come to light, such as the Sonshine collection of mollusks from California, and the uncatalogued Elihu Hall collection from various parts of the United States. A capable volunteer worker, Mrs. M. J. Taylor, classified, catalogued, and labeled most of the collection of echinoderms, but was compelled to relinquish her work in May on account of ill health.

INSTALLATIONS AND REARRANGEMENTS—ZOOLOGY

The habitat group of northern fur seal (Plate 19) is a notable addition to the Hall of Marine Mammals (Hall N). The scene depicted is on St. Paul's Island, one of the Pribilof group in the Bering Sea. Forty mounted seals are included, showing old bulls with their "harems" of females and many small pups. A herd of young seals is shown in the background. Among these are some of the three-year-old males called "bachelors," the surplus of which supplies the market with sealskin furs. Various sea-birds such as the auklets and puffins, which nest in the seal rookery, are also shown. The materials and studies for the group were collected by Staff Taxidermist C. J. Albrecht in 1937, and he prepared them himself, aided by Assistant Taxidermist Frank C. Wonder. The background, in which the foggy atmosphere of the Pribilofs is captured with extraordinary realism, is by Staff Artist Arthur G. Rueckert.

Additions to the systematic collection of mammals in Hall 15 include a Mongolian wild ass mounted by Staff Taxidermist Julius Friesser. The case of South American monkeys was revamped by Staff Taxidermist W. E. Eigsti, seven new specimens being added; it now includes all but one genus of the South American primates. Mr. Eigsti also mounted specimens of the Guinea baboon, wombat, and Tasmanian devil for the systematic series.

Mr. Friesser completed the mounting of six African forest hogs for a group, to be completed in 1941, with accessories to show their African forest habitat. He also mounted a Philippine pig, a river hog, and a bush pig for the systematic case of pigs. These were supplemented by a reproduction of a babirusa, prepared by Staff Taxidermist Leon L. Walters. This was made in celluloid, by the special process originated and developed at the Museum by Mr. Walters more than twenty years ago, and increasingly used ever since that time.

A new habitat group in Hall 20 has its scene laid at the base of snow-capped Mount Egmont in New Zealand, to provide a setting for Mantell's kiwi. The kiwis are remarkable flightless birds characteristic of New Zealand. The mother bird in the group stands beside a nest which contains its two disproportionately large eggs. The group (Plate 21) was prepared by Staff Taxidermist John W. Moyer, with accessories by Preparator Frank H. Letl, and background by Staff Artist Rueckert.

In the systematic collection of birds in Hall 21, the introduction of a case near the east entrance under the heading "What is a bird?" forms a step toward the more subjective and educational type of exhibit which has become of increasing importance to a logical growth of the Museum's public displays. This case shows the place of birds among their vertebrate relatives, and demonstrates some of the major peculiarities of the bird group, such as the modification of the arms into wings, the elaborate feather structure, and the system of air-sacs which pervade the body. Much care was expended on the preparation of the models for this screen, and on the accompanying explanatory labels, by Miss Nellie B. Starkson, Artist-Preparator, under Curator Boulton's supervision. The systematic series was amplified further by the installation of two screens of the ducks of the world, one of the eagles, hawks, and vultures, and one of the herons, storks, and ibises, all the work of Mr. Moyer.

A temporary exhibit of eggs, based upon the recently acquired Knickerbocker Collection, was prepared for exhibition in Stanley Field Hall at the Easter season. It attracted much favorable attention, and was later removed to the southwest corner of Hall 21.

A considerable number of celluloid models of reptiles and amphibians was finished during the year, but none were placed on exhibition, pending rearrangement of the cases. Staff Taxidermist Walters was engaged in the completion of the habitat group of the loggerhead turtle, shown laying its eggs at night on a Florida sea beach. This group will not be opened until the individual lighting of the adjacent systematic cases and the opposite crocodile group, planned for completion in 1941, makes possible the solution of a serious problem of reflections. Two cases of enlarged models of tadpoles were in an advanced stage at the end of the year. These are the work of Preparator Frank H. Letl and Mr. J. B. Krstolich, and embody much research in the use of plastics suitable for this purpose.

Much progress was made in the preparation of fish exhibits in 1940. The specimens exhibited in Hall 18 were transferred to new

cases in Hall O on the ground floor. New individual labels were ordered prepared for the entire collection, and experiments were made in the style of the large case labels. The new built-in cases with fluorescent lighting are a great improvement over anything previously used in the Museum for fishes. The habitat group of fishes of the Texas coast was enlarged and improved for its permanent installation in Hall O. It shows the fishes of the sandy bottom and their association with the "oyster lumps" which develop in such situations. A colorful habitat group of the New England fishes, exhibiting the marine life of a tidepool on the rocky coast of Maine, was completed during the year. Installation and preparation of both systematic collections and groups was the work of Staff Taxidermist Leon L. Pray. Accessories for the groups were produced under Mr. Lett's direction. Hall O requires only finishing touches and the completion of labels, and is scheduled for opening in 1941.

Experiments were made by the Division of Insects to decide on a style of case, and on labels and other details, for the exhibit of insects planned for Hall 18. A small group of Florida tree snails was installed among the lower invertebrate exhibits in Hall M.

The construction of a workroom for the Division of Birds on the fourth floor is an especially important improvement in conjunction with the establishment of a large share of the bird collection in the new cases in the west gallery on that floor, as it provides adequate working space accessible to the collections.

N. W. HARRIS PUBLIC SCHOOL EXTENSION

Because of the reserve of material acquired in preceding years, no extensive collecting was necessary during 1940 to enable the work of the Harris Extension to proceed at an active rate. Nevertheless, ten days were spent by staff members in local field work to procure specimens needed for immediate use or to add to reserve collections. Forty-seven birds were obtained, of which thirty-one were mounted for exhibition purposes, and the remainder added to reserves. Twenty-seven bird skins were purchased to replace an equal number destroyed while on loan at an elementary school. Numerous plant specimens, particularly common trees, were collected for inclusion in the loan herbarium now maintained by this Department.

During the year twenty-four exhibits were prepared, of which sixteen were installed in standard-sized cases, and eight in a new type of hand case. Worthy of special comment among these exhibits

are six relating to the life of the honeybee in which effective use was made of photomacrographs to show those details of the insect's anatomy which are ordinarily pointed out in elementary science instruction as remarkable instances of adaptation. Also, in four cases containing realistic models of a poison ivy plant, tinted photographs were used to portray a typical case of ivy poisoning. The original illustration, also a tinted photograph, was supplied by Dr. A. W. Stillians, of Northwestern University Medical School.

The new type of hand case was designed as a container for small specimens which are best examined at close range. It is approximately $4 \times 13 \times 18\frac{1}{2}$ inches, is constructed of plywood, and has metal-bound corners, a hinged lid and suitcase latches. The bottom of the case may or may not be covered with glass, depending on the nature of the material, and the inside of the lid is suitable for descriptive matter, charts, or photographs. Four such cases were installed with synoptic collections of insects to illustrate the principal common orders, two were installed with insects directly or indirectly beneficial to man's economy, and two were installed with injurious insects.

The remaining six of the twenty-four cases were in a sense re-installations because the original mounted animal specimens were retained. However, since revisions were radical and extensive, with much new material added, they have been counted as new exhibits. The subjects thus treated were the prairie dog, prairie chicken, tree sparrow, and hummingbird, of which two cases were prepared.

Scenic backgrounds painted by a Work Projects Administration artist, were added to ten cases. The marked superiority of painted backgrounds over the tinted enlarged photographs extensively used heretofore greatly improved the effect of realism in these habitat groups. Considerable work also was done to the specimens and foregrounds when the new paintings were placed.

A hand-powered hydraulic press with electrically heated platens, capable of exerting a pressure of thirty tons, was purchased to facilitate the production of celluloid or other plastic casts from metal molds. With this machine, the Harris Extension now employs a technique in which high temperatures and great pressures are used to produce artificial foliage with the quality of good wax leaves, yet with the greater strength and durability to be had in plastic materials.

Many highly complimentary letters of appreciation were received from teachers and principals who find that the portable Museum exhibits aid materially in the teaching of science in the schools.

Fourteen additions were made to the list of those receiving Harris Extension cases, and three recipients were removed. The net gain of eleven brings the total served at the end of the year to 485. Since the lending service of the Museum includes practically all of the public schools, increase in the number reached is to be expected only through the gradual growth of the public school system and the inclusion of more denominational schools and social service agencies such as the six Chicago Boys' Clubs and three hospital schools added in 1940.

Thirty-four cases each were delivered during the year to 481 schools and other Chicago institutions. In addition to the 962 cases thus kept in constant circulation, twenty-four loans totaling sixty cases were made in response to special requests. Thirteen of these requests included unattached objects such as bird study skins, herbarium sheets, or geological specimens, all of which could be handled by pupils, and nine were for standard cases only. Various exhibits and specimens were supplied for the elementary school science teacher conferences held in the Lecture Hall of the Museum under the auspices of the James Nelson and Anna Louise Raymond Foundation for Public School and Children's Lectures.

A metal stand with casters was designed to increase the usefulness of the portable Museum cases in special schools where many pupils are confined to beds or wheelchairs, and a trial stand was constructed in the Museum shops. It supports two Harris Extension cases in a way which enables them to be wheeled into position at bedsides, or to be viewed conveniently by a seated person. This type of stand will be used by at least ten special schools, and there are prospects of its being adopted by many other schools using Harris Extension cases.

The two Museum trucks traveled a total of 11,865 miles in the distribution of cases. Such work as was necessary to keep the trucks in good mechanical condition, and preserve their appearance, was completed during the summer months.

With a certain minimum of material required to maintain the pattern of service which has developed over a period of years, the efforts of the Harris Extension staff have been devoted in a large degree to the task of re-working old exhibits as well as creating new ones. After a few years, damaged or obsolescent material tends to accumulate at a rate faster than the preparation of new exhibits to replace it. Repairs must be made quickly and continuously in order that no deficiency of loan material may be experienced.

Nevertheless, there was a marked reduction in the amount of damage to cases directly attributable to accident or misuse in any particular school. The front glasses were broken in twenty cases, 31 per cent less than the previous year; fifteen label frames were damaged, a reduction of 75 per cent; and the woodwork of nine cabinets was injured as against ten in the preceding period. These figures lose significance, however, in view of the total repairs made necessary through wear and tear accumulated over a period of time. Exclusive of complete reinstallations, repairs were made to installations in sixty-nine cases, cabinet repairs to eighty-one cases, and label frame repairs in 125 instances. New bottoms were fitted to eighty cases, hanger strips were added to ninety-two cases, and auxiliary label guides to 108 cases. The two latter items were strengthening members calculated to reduce the amount of damage suffered by the case assembly. The gray or soiled interiors of 123 cabinets were painted buff to conform to the standard color in general use in the Museum.

An additional 116 feet of shelving was constructed in the new ground floor storeroom to accommodate those Harris Extension cases which have been withheld from circulation for some time but which are gradually being restored to usefulness or replaced.

The usual annual cleaning, polishing, and inspection of cases were accomplished in July and August when all of them were in storage in the Museum.

THE JAMES NELSON AND ANNA LOUISE RAYMOND FOUNDATION FOR PUBLIC SCHOOL AND CHILDREN'S LECTURES

In 1940 the James Nelson and Anna Louise Raymond Foundation continued the presentation of various programs of motion pictures, lectures, tours, and other activities to supplement the educational work of the schools and to provide enjoyable and educational hours of entertainment for the children.

Included were the regular spring, summer, and fall series of motion picture programs for children shown in the James Simpson Theatre, and two special patriotic programs; guide-lecture tours in the exhibition halls; four series of special science programs; radio follow-up programs; extension lectures given in the classrooms and auditoriums of schools; a special course for leaders of recreational groups—"Recreation Through Nature"—given in co-operation with

the Leaders' Training School of the Work Projects Administration; a series of five talks arranged for the guidance of science teachers in the elementary grades, and a series of twelve experimental educational programs by television in co-operation with the Zenith Radio Corporation.

Special efforts have been made to fulfill the increasingly great number of requests for lectures and tours in the Museum. These demands are heaviest during April, May, June, October, and November, when good weather makes it possible for groups to travel hundreds of miles. During January, February, and March, when groups find it difficult to come to the Museum, the extension lecture service is stressed.

ENTERTAINMENTS FOR CHILDREN—RAYMOND FOUNDATION

The programs in the three series of motion picture entertainments, and the two special patriotic events arranged for boys and girls were as follows:

SPRING COURSE

- March 2—Animals at Home.
Including animal cartoon.
- March 9—The Ups and Downs of the Earth's Crust.
Including cartoon feature.
- March 16—The World of Trees.
- March 23—The Home of the Dinosaurs.
Including dinosaur cartoon.
- March 30—Far Flying Feathered Friends.
Including Silly Symphony on birds.
- April 6—Life Under Water.
- April 13—Spring Comes to the Woodlands.
Including Aesop's fables.
- April 20—Plant and Insect Partnerships.
- April 27—First Aid to Nature.

SUMMER COURSE

- July 11—An Hour in Mexico.
Mexican dancers and motion pictures.
- July 18—Vacationing in the Open.
- July 25—Elephant Boy.
Featuring Sabu, a boy from India.
- August 1—Nanook of the North.
The story of an Eskimo boy; also a cartoon.
- August 8—In the South Seas with Gifford Pinchot.
- August 15—Animals of the Polar Regions.
Including a cartoon.

AUTUMN COURSE

- October 5—Our North American Indians.
- October 12—Lands Around the Caribbean.

October 19—Along the Amazon in South America.
Color movie by Henrietta Mertz.

October 26—From Jungle to Desert in Africa.
Including a cartoon.

November 2—Asia's Southeast Corner.
Including a cartoon.

November 9—China and Her People.
Including a cartoon.

November 16—Through the Islands of the South Seas.
Including a cartoon.

November 23—Why a Thanksgiving?
Including a cartoon.

November 30—Our National and State Parks.

In addition to the above-mentioned series of entertainments the following two special patriotic programs were offered:

February 12—"Abraham Lincoln."

February 22—George Washington program—"Betsy Ross."

The total number of motion picture programs offered in the James Simpson Theatre was twenty-six. Twenty of these were repeated at a second showing, which makes the total of programs given forty-six. The attendance at these children's entertainments was 29,110. Of this number 9,525 attended the spring course, 5,876 the summer course, 10,400 the fall series, and 3,309 the special patriotic programs.

Publicity was given to the programs by the *Chicago Daily News*, *Chicago Tribune*, *Chicago Herald-American*, *Chicago Daily Times*, *Downtown Shopping News*, and many neighborhood and suburban papers.

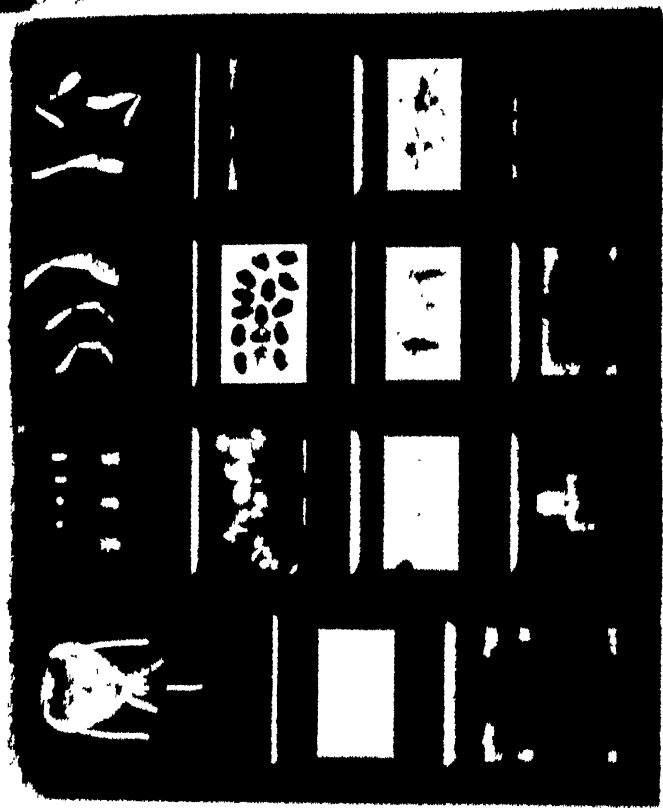
FIELD MUSEUM STORIES—RAYMOND FOUNDATION

Two series of *Field Museum Stories for Children* were prepared by members of the staff of the Raymond Foundation. They were illustrated with line drawings and photographs, each illustration being selected to add information as well as to make the story more attractive. The subjects of the stories correlated with films shown in the programs given in the Theatre, and were of seasonal interest to the children. Following are the titles of the stories in each series:

Series XXXIV—The Bengal Tiger; Rivers as Sculptors of the Land; Mahogany—Green Gold of the Tropics; Dinosaurs; The Red Winged Blackbird; Ocean Sponges; The Plants in a Woodland Community; Insect Mimicry and Protective Coloration; The Importance of Conservation.

Series XXXV—Pueblo Houses; The Pyramids of Mexico; Humpless Camels of South America; Mummies from Egypt; The Taj Mahal; Rice Cultivation in China; Volcanoes; The Wild Turkey—a Vanishing Game Bird; Plants Are Natural Protectors of the Hills.

HONEYBEE



HONEYBEE

Field Museum of Natural History

Some 25,000 copies of *Museum Stories* were distributed to those attending the Saturday morning programs.

LECTURE TOURS FOR CHILDREN—RAYMOND FOUNDATION

By means of conducted tours, the use of exhibition halls for classroom work was extended to the following groups:

	Number of groups	Attendance
Tours for children of Chicago schools:		
Chicago public schools	446	19,146
Chicago parochial schools	38	1,709
Chicago private schools	14	322
Tours for children of suburban schools:		
Suburban public schools	334	11,704
Suburban parochial schools	21	821
Suburban private schools	6	127
Tours for special groups of children:		
Children's clubs	40	2,609
Special science programs	112	5,858
Miscellaneous	68	2,615

Thus guide-lecture service was given to 1,079 children's groups, and the aggregate attendance was 44,911, an increase in number of 6,736 over 1939.

In a number of instances, the schools and groups receiving such service were also given illustrated talks and discussions in the lecture hall preceding the tour in the exhibition halls. These talks and pictures provided the background for a better understanding of the exhibits in the Museum halls. The total number of these supplementary lectures was 165, and they were attended by 11,693 children.

As in years past, many groups came in from outside the state, especially during the months of April, May, September, and October. The principal influx of such groups came from communities in Wisconsin, Michigan, and Indiana.

The Museum was host on December 3 and 5 to parties of 4-H Club boys and girls who were delegates to the National Congress of 4-H Clubs held in Chicago. These groups numbered 772 girls and 750 boys. A flood of letters has been received from these fine young citizens expressing their appreciation for Field Museum's part in their entertainment.

SCIENCE PROGRAMS—RAYMOND FOUNDATION

In the last few years a greater emphasis has been placed on science in the schools of the Chicago region. To meet the greater need thus engendered for lectures, tours, and supplementary mate-

rials, special science programs were offered in Field Museum to the schools of the area.

The programs offered were as follows:

September and October:

Conservation—Taking Care of Our Natural Wild-Life Friends (5th and 6th grades—three programs); The Preservation and Restoration of Natural Resources (7th and 8th grades—three programs).

Trees (Common Trees of Chicago Area)—What Tree Is That? (5th and 6th grades—two programs); Trees and How They Grow (7th grade—two programs); Trees as Members of the Plant Kingdom (8th grade—one program).

November and December:

Animals of the World (4th grade—four programs); Rocks, Minerals, and Fossils (6th grade—six programs).

These programs consisted of illustrated lectures in the Museum Lecture Hall or the James Simpson Theatre, followed by directed study in the exhibition halls. Sheets of questions and suggestions were given to the students, and with the help of Raymond Foundation staff members the answers were obtained from the exhibits.

These programs proved so successful, and the demand for them became so great that besides the twenty-one programs offered, fourteen additional ones were given, making a total of thirty-five special science programs. One hundred and fourteen schools brought groups into the Museum for these programs. Of these, ninety-seven were Chicago public schools, ten Chicago parochial, one Chicago private, three suburban public, and three suburban parochial.

The total attendance at the thirty-five lectures was 6,584. Of this number, 5,858 were divided into 112 groups for supervised study and work with the exhibits and question sheets.

RADIO FOLLOW-UP PROGRAMS—RAYMOND FOUNDATION

The staff of the Raymond Foundation again co-operated with the Chicago Public School Broadcasting Council by presenting two series of programs which followed radio broadcasts given by the Council. These programs were based upon Museum exhibits which correlated with the subjects of the broadcasts. Meetings were held in the Lecture Hall where slides were used and actual objects were available for the students to handle. Mimeographed information sheets were distributed and questions were answered as informal discussion progressed. The meetings were followed by tours in the exhibition halls. The subjects were as follows:

Conservation; Plant Pirates; Summer Science Hobbies; Trees and Their Products; Trees Prepare for Winter.

Four of the six programs were repeated, making a total of ten programs with an attendance of 849.

The program on "Trees and Their Products" was repeated by request at the Fourth Annual Broadcast Conference held at the Congress Hotel early in December for the benefit of the 1,200 visiting delegates. This demonstration was made as similar as possible to the original program in Field Museum.

EXTENSION LECTURES—RAYMOND FOUNDATION

Groups in educational institutions were offered extension lectures as in the past. These lectures, illustrated with slides, were given in classrooms, laboratories, and assemblies. At the conclusion of lectures, if time permitted, an open discussion followed in which teachers and students were invited to ask questions and participate in the discussion led by the Field Museum speaker. The following subjects were offered to high school groups:

The Dynamic Earth and Its Meaning to Man; The Story of Rocks and Minerals That Are of Economic Importance; Plants and Animals of Prehistoric Ages; Prehistoric Man; The Natural Fauna of the Chicago Area (mammals, birds, reptiles, amphibians, fishes, insects); Mammals of the Chicago Area; Birds of the Chicago Area; North American Mammals; Amphibians and Reptiles; Insects; The Natural Flora of the Chicago Area (algae, fungi, flowering plants, trees); Wild Flowers of Swamp, Sand-Dune, and Prairie in Chicago; Trees of the Chicago Area; What Will the Great Out-of-Doors Be Like 100 Years from Now? (Conservation); The Adventures of a Great Museum of Natural Science; Ancient Egyptian Customs; North American Indians.

The following subjects were offered to elementary school groups:

FOR GEOGRAPHY AND HISTORY GROUPS

North American Indians; Indians of the Woodlands and Plains; The Navajo and Pueblo Indians; Migisi, the Indian Lad; Mexico, Land of the Feathered Serpent; Caribbean Lands; South America; The Egyptians; China and Her People; Prehistoric Peoples; Clothing from Cave Man to Civilization.

FOR SCIENCE GROUPS

Trees of the Chicago Region; Flowers of the Chicago Region; Our Outdoor Friends; Nature in City Yards and Parks; The Changing Earth; The Work of Wind and Water; Geography of the Chicago Region; Plants and Animals of Long Ago; A Rock May Be a Treasure Chest; Insects: Friends and Enemies; Animals of the World at Home; Birds of the Chicago Region; Mammals of the Chicago Region; What Will the Great Out-of-Doors Be Like 100 Years from Now? (Conservation); The Adventures of a Great Museum.

The Raymond Foundation staff gave a total of 405 extension lectures, and the aggregate attendance was 139,286. This service was divided as follows:

	Number of groups	Attendance
Chicago elementary school groups	352	120,869
Chicago high school groups	39	16,970
Special schools	5	787
Other organizations	9	1,160

RECREATION LEADERS' TRAINING COURSE—RAYMOND FOUNDATION

During the months of April, May, and June, Field Museum participated in the Leaders' Training School of the Work Projects Administration. A course, "Recreation through Nature," given at the Museum, consisted of ten sessions during which ways of teaching nature through recreation were discussed and demonstrated. Museum exhibits and slides were used in these demonstrations. The total attendance at the ten meetings was 508.

In the Sixth Annual Recreation Conference sponsored by the Chicago Recreation Commission, a member of the Raymond Foundation staff, Mrs. Leota G. Thomas, was invited to participate in "Information Please." This quiz program, with a board of experts to answer the questions, was modeled on a well-known radio feature produced under the same title.

TEACHERS' TRAINING COURSE—RAYMOND FOUNDATION

As in 1939, the science supervisors and science consultants of the Chicago Public Schools co-operated with Field Museum in preparing a series of talks and tours for teachers conducting science courses in grades from the third to the eighth inclusive. These teachers were particularly interested in knowing what the Museum had to offer them and their students in supplementary material, and how to make use of it. The following five programs were offered:

- March 2—Grade V..... Bird Study.
- March 9—Grade III..... Trees.
- March 16—Grade VI... .. { Plant Families.
Animals of Our Forest Preserves.
- March 23—Grades VII, VIII.. Spring Flowers and Bird Migration.
- March 30—Grade IV { Spring Wild Flowers.
Soil.

Talks and discussion in the lecture hall were followed by tours and demonstrations in the exhibition halls. As a result, many of these teachers returned to the Museum with their students to study the materials at the times when they were being discussed in the classrooms. The total number of teachers attending the five sessions was 339.

TELEVISION PROGRAMS—RAYMOND FOUNDATION

During the months of January, February, and March, Field Museum again participated in a series of experimental programs over the Zenith Radio Corporation's television station, W9XZV. Members of the Raymond Foundation staff planned the programs and experimented with various methods of presenting educational

material by television. Guest speakers from other departments of Field Museum were invited to participate. The following programs were presented:

- January 12 Introduction.
What a Museum Is and Its Purpose—Miss Miriam Wood.
Introduction to Geology Series—Mrs. Leota G. Thomas.
- January 19 The First Two Billion Years Are the Hardest—Assistant Curator Bryant Mather.
- January 26—Rocks and Minerals—Curator Sharat K. Roy.
- February 2—Hunting the Dinosaur—Curator Elmer S. Riggs.
- February 9—Paleontology—What and Why—Assistant Curator Bryan Patterson and Assistant Paul O. McGrew.
- February 16—Turtles—Large and Small—Curator Karl P. Schmidt.
- February 23—Making the Dead Appear to Live—Staff Taxidermist John W. Moyer.
- March 1—The Story of Man—Curator Henry Field.
- March 8—Melanesian Life—Assistant Curator Alexander Spoehr.
People of Africa—Curator Wilfrid D. Hambly.
- March 15—Pueblo Religion—Assistant Curator Alexander Spoehr.
- March 22—Spring Wild Flowers—Miss Sophia Prior.
Miss Marie B. Pabst.
- March 29—Skeletons—Assistant Curator Dwight Davis.
Conclusion—Director Clifford C. Gregg.

ACCESSIONS—RAYMOND FOUNDATION

For use in the Theatre and Lecture Hall, and in extension lectures, the Raymond Foundation acquired 629 stereopticon slides made by the Division of Photography, and 16 prints. The Museum Illustrator and assistants colored 1,693 slides.

The use of 2x2 inch natural color slides was started with a collection of 134. A special projector was purchased for use with these, and a slide viewer was also obtained.

Forty-five records of fifteen "How Do You Know?" Field Museum radio broadcasts were received from the National Broadcasting Company. Five phonograph record albums and a phonograph were purchased.

LECTURE TOURS AND MEETINGS FOR ADULTS—RAYMOND FOUNDATION

To clubs, colleges, church groups, other organizations, and Museum visitors in general, guide-lecture service was made available without charge. Regular public tours were given on weekdays (except Saturdays) at 2 P.M. During July and August additional morning tours were given at 11 A.M. Monthly schedules of the tours offered were printed and distributed at the entrances of the Museum, and standards announcing each day's tour were placed at the north and south entrances of the Museum. Inaugurated also was a policy

of offering special lecture tours for adults at the time of opening outstanding new exhibits such as the Hall of Babylonian Archaeology, and the "World's Food Plant" murals. Tours for the public included 144 of a general nature and 139 on specific subjects. In the 283 groups which participated the gross attendance amounted to 5,377 persons.

There were also special tours for sixty-nine colleges with 2,179 persons attending, eleven clubs with attendance of 254, and fifty-nine other organizations with attendance of 1,733. Thus a total of 422 tours for adults were given with a total attendance of 9,543.

The James Simpson Theatre was made available to the Board of Education for the commencement exercises held on June 13 for 1,280 foreign-born adults. The Raymond Foundation assisted in handling this program.

SUMMARY OF ATTENDANCE AT ENTERTAINMENTS, LECTURES, ETC.

RAYMOND FOUNDATION

In all, the various activities of the Raymond Foundation provided services for a grand total of 2,163 groups with an aggregate attendance of 243,256 persons.

The effort to bring the greatest possible number of people to the Museum, and reduce the number reached extra-murally resulted in an increase of 157 groups and 21,882 persons served at the Museum, and a decrease of 99 in the number of extension lectures and 47,391 in the number of persons reached outside.

LECTURES FOR ADULTS

During the spring and autumn months the Museum's seventy-third and seventy-fourth courses of free lectures for adults were presented in the James Simpson Theatre on Saturday afternoons. They were illustrated, as in past years, with motion pictures and stereopticon slides. Following are the programs of both series.

SEVENTY-THIRD FREE LECTURE COURSE

- March 2—Springtime in the Rockies.
Alfred M. Bailey.
- March 9—Social Insects.
Dr. Alfred Emerson.
- March 16—Penthouse of the Gods.
Theos Bernard.
- March 23—Threshold of a New World.
Vincent Palmer.
- March 30—Our Attic Stairs—Southeastern Alaska.
Karl Robinson.

- April 6—Snow Peaks and Flower Meadows in the Canadian Rockies.
Dan McCowan.
April 13—Africa Smiles.
Herbert S. Ullmann.
April 20 Birds of America.
Dr. Arthur A. Allen.
April 27—Return to Malaya.
Carveth Wells.

SEVENTY-FOURTH FREE LECTURE COURSE

- October 5—With the Snow Cruiser in Antarctica.
Dr. Thomas C. Poulter.
October 12—Pacific Northwest.
Karl Robinson.
October 19—At Home in the Union of South Africa.
Dr. Michail Dorizas.
October 26—Undersea Life of the Caribbean.
René Dussaq.
November 2—Birds That Haunt the Waterways.
Dr. Olin Sewall Pettingill, Jr.
November 9—The Hawaiian Islands.
Hal Corey.
November 16—Old Ghost Falls.
Harold D. Fish.
November 23—Springtime in the South.
Dr. John B. May.
November 30—If Marco Polo Had a Camera.
Harrison Forman.

At these eighteen lectures the total attendance was 20,197 persons, of whom 9,908 attended the spring series and 10,289 the fall series. Included in the aggregate attendance were 2,313 Members of the Museum.

LAYMAN LECTURES

During 1940 the Sunday afternoon lectures presented by Mr. Paul G. Dallwig, The Layman Lecturer, attained the highest point of attendance since their inauguration in October, 1937. Thirty regular lectures were given, with an aggregate of 2,784 persons attending, or an average of 93 to each party. In addition, one special lecture was given for a group of 67 out-of-town visitors. Because of necessary restrictions on the size of the groups, to make it practicable to conduct them through the halls containing exhibits illustrating Mr. Dallwig's lectures, the number actually attending was far below the number applying for reservations. In most instances reservations had to be made several weeks in advance. Even though the permitted size of the parties was somewhat increased over previous years, it was impossible to meet more than a portion of the requests for reservations.

Mr. Dallwig continued this work on the same basis as in previous years—without compensation from either the Museum or his audiences, but purely from his interest in disseminating scientific information in a popular and dramatized form. His interpretations of science from the layman's point of view have a quality distinguishing them from other methods of approach employed at the Museum. They have won him a large following among intelligent groups of laymen, and also wide acclaim in the press, including not only the daily newspapers but important national magazines.

Mr. Dallwig's subjects, during the seven months of 1940 in which his lectures were presented, follow:

January (four Sundays)—The Romance of Diamonds from Mine to Man.
 February (four Sundays)—Prehistoric Monsters in Nature's "March of Time."
 March (five Sundays)—Digging Up the Cave Man's Past.
 April (four Sundays)—The Romance of Diamonds from Mine to Man.
 May (four Sundays)—The Parade of the Races.
 November (four Sundays)—The Parade of the Races.
 December (five Sundays)—Mysterious "Night-Riders" of the Sky.

SUMMARY OF ATTENDANCE AT LECTURES, ETC.

In all, the Museum rendered instruction or similar services during 1940 to a total of 2,212 groups aggregating 266,304 individuals. These figures include all those reached in 2,163 groups comprising 243,256 children and other persons who participated in the various activities under the auspices of the James Nelson and Anna Louise Raymond Foundation, plus the 20,197 who attended the Saturday lectures for adults in the James Simpson Theatre, and the 2,851 who participated in the Sunday afternoon lectures presented by the Layman Lecturer.

LIBRARY

During 1940 the Library continued to make progress both in expanding its collections and increasing its services to scientists and the public in general. Approximately 120,000 books and pamphlets, divided among the General Library and the four departments, now make up the collection.

The Library depends for its growth to a large extent on the exchanges of publications with other institutions, and in 1940, as in previous years, many important additions have been made through this medium. However, because of war in Europe and Asia, exchanges from foreign countries have been curtailed, and in many instances suspended entirely, to the great detriment of this and

other reference libraries. But in this country, at least, some new arrangements for valuable exchanges have been negotiated with mutual benefit to Field Museum and the co-operating institutions.

Some 2,800 books were accessioned, and for these, as well as 2,172 pamphlets received, there have been written 23,966 cards. These include cards which have been distributed in the files of the General Library and also in the departmental libraries.

It has been noted with gratification that more and more students each year are using the resources of Field Museum's Library for assistance in their studies. In 1940 more than twice as many availed themselves of the opportunities presented as in 1939. Some of the Library's visitors have come from as far as the east and west coasts of the country, to consult books not available in other libraries.

The Union List of Serials, an almost indispensable reference aid, is in process of revision, and all libraries participating (of which this is one) have been assisting in the task by work on their individual lists. This has taken a good deal of the Library staff's time, but it is one of the "musts" for successful reference work. Publication of the new Union List is anticipated some time in 1941.

The disposition of duplicate material in an advantageous manner is always an important problem for libraries, and requires much attention. The Museum Library during the past year considerably reduced such material in its collections, both by sales and by exchanges. Much satisfaction is derived from this accomplishment because the material has thus been placed where it can be of use in completing files in other libraries.

For a long time it has been desired that the reading room should be located where it would be more convenient to visitors arriving on the passenger elevator. Such relocation is now being accomplished by reconstructing and refurnishing the stack room as a reading room, and moving the book stacks into the present reading room, a task which will be completed early in 1941. The new reading room, in addition to being more conveniently arranged, will be provided with an entirely new system of fluorescent lighting much more effective and agreeable for readers. The fluorescent lights are being installed in both the reading room and in the stacks. Revision of the arrangement of the Library rooms has provided opportunity to replace the wooden stacks with modern steel ones (grained and stained like mahogany), and to improve working conditions in a manner which will increase efficiency of all operations.

It has been the aim of the Library each year to fill out a few of its incomplete files of periodicals, and in 1940 it had the good fortune to obtain some desiderata of long standing. The *Zoologist*, completed by the purchase of seventy-four volumes, is perhaps the outstanding example. The much needed *Special Papers of the Geological Society of America* were also purchased. A subscription was entered for *Cultureel Indië*, beginning with the first volume. Subscriptions were taken also for the *National Horticultural Magazine*, the *Bulletin of the American Association of Petroleum Geologists*, the *Journal of Geomorphology*, and the *Botanical Review*. Among interesting purchases of books were: Kern Institute, *Annual Bibliography of Indian Archaeology*; Reeve, *Conchologia Iconica* (20 vols.); Institut Français Damas, *Mémoires* (4 vols.), and *Documents d'Etudes Orientales* (7 vols.); *Encyclopaedia of Islam*; a reprint of Andreas Vesalius, *Icones Anatomicae*; the completing volume of Witherby's *Handbook of British Birds*; Fontana, *Sur le Vénin de la Vipère*; Cuvier, *Règne Animal, Les Vipères* (2 vols.); Le May, *Buddhist Art in Siam*; *Cordillera Expedition* (1901-1902), and also the popular account of the last.

Mr. Stanley Field, President of the Museum, again presented the year's issues of the weekly *Illustrated London News*, a periodical of value for its scientific articles and pictures, especially in the field of archaeology. The Director presented numerous publications, including the files of various periodicals. From time to time through most of the year Dr. Albert B. Lewis, Curator of Melanesian Ethnology, presented books of travel, and after his death in October the Museum purchased a collection of works from his library, many of which concerned countries he had visited on the Joseph N. Field South Pacific Expedition (1909-13). Dr. Henry Field, Curator of Physical Anthropology, regularly contributed several current periodicals as well as many books that were of interest to members of the staff. Dr. Field also presented a fine collection of books, many of them rare and beautifully bound volumes of the seventeenth and eighteenth centuries. These include books of travel, science, history, and some of the classics. Dr. Wilfred H. Osgood, Chief Curator of Zoology, presented a copy of *Mis Viajes a la Tierra del Fuego*, by Alberto M. de Agostini. This book has a wealth of excellent illustrations, and is a comprehensive account of what is known of the Chilean and Argentinian island at the extreme southern tip of South America.

Mr. Emil Liljeblad, former Assistant Curator of Insects, presented 175 books and pamphlets on Coleoptera. Many of these were of

early date, and they form a notable addition to the entomological division. Mr. Bert E. Grove, of the Raymond Foundation staff, gave eleven scrapbooks containing historical records of Chicago's Century of Progress Exposition (1933-34). He also gave several scientific books of the early nineteenth century. Dr. E. E. Sherff, Research Associate in Systematic Botany, as in previous years generously contributed many botanical monographs as well as parts of botanical periodicals. Among these were a copy of Dr. Sherff's *Labordia* printed on special paper, a copy of DeCandolle's *Origine des Plantes Cultivées* (fourth edition), and works on the flora of different parts of the world.

Mr. Karl P. Schmidt, Curator of Amphibians and Reptiles, presented many maps secured on expeditions to South America. He also contributed current periodicals, and various books on Reptilia. Mr. Henry W. Nichols, Chief Curator of Geology, presented files of periodicals, including many complete sets, which are difficult to obtain. The *Chemical Abstracts* of the American Chemical Society are among those especially well represented—the first two volumes are exceedingly rare, and this set contains Volume 2. Mr. Paul C. Standley, Curator of the Herbarium, and Dr. Julian A. Steyermark, Assistant Curator of the Herbarium, also presented desirable books. Among Dr. Steyermark's gifts were copies of two new books of his own authorship, *Spring Flora of Missouri*, and *An Annotated List of the Flowering Plants of Missouri*.

The Carnegie Institution of Washington continued to send its valuable publications which are of much use for reference in connection with work conducted here. Several years ago Mr. Kojiro Abe, of Mikage-Hyogoken, Japan, presented the Library with Volume 1 of *Soraikwan-kinsho*, a much appreciated work, and in 1940 he gave Volume 2. The publishers of the *Naturaliste Canadien* sent many of the numbers of this useful periodical. Other friends of the Museum have given many valuable works which add greatly to the usefulness of the Library. The Museum gratefully acknowledges all these.

The Library is indebted to various learned institutions for the loan of publications needed for special consultation. Among these are the John Crerar Library, Chicago; the Libraries of the University of Chicago; the Library of Congress; the United States Department of Agriculture; Harvard University (Libraries of the Peabody Museum, of the Museum of Comparative Zoology, and of the Gray Herbarium); the Missouri Botanical Garden; Rochester University Library, and Columbia University Library. The Museum

has in turn been glad to help research workers from all parts of the country by the loan of material not found in other libraries.

The Library adopted a new bookplate for use in the volumes on its shelves. The design, showing the Museum building, the "lamp of knowledge," and sketches symbolizing the four scientific departments of the institution, is the work of Staff Illustrator Carl F. Gronemann.

PUBLICATIONS AND PRINTING

As is customary each year, the publications of Field Museum were generously distributed during 1940. The Museum sent to institutions and individual scientists on its domestic exchange list, and to about half of its foreign exchanges, 11,782 copies of scientific publications, 1,142 leaflets, 984 miscellaneous publications and pamphlets, and 500 copies of large maps relative to tribal distribution in the Near East. Shipment to the other portion of the foreign exchanges—various European, Asiatic, and African institutions, museums, libraries, and scientists—was of necessity withheld because of unsettled conditions abroad. However, the publications in these consignments have been prepared for transmittal and stored to await more favorable shipping conditions.

To Members of the Museum 3,759 copies of the *Annual Report of the Director* for 1939, and 602 copies of leaflets were sent.

Sales during the year totaled 1,923 scientific publications, 7,093 leaflets, and 13,321 miscellaneous publications and pamphlets, such as Guides, Handbooks, and Memoirs.

An increase of twenty-one was made in the number of names of institutions and scientists on the Museum's exchange lists.

Twenty-two large boxes and three cartons containing 4,458 individually addressed envelope parcels, 354 wrapped packages of publications, and 135 tubes containing maps, were shipped to the Smithsonian Institution at Washington, D.C., for distribution to those foreign countries to which it was possible to forward consignments during 1940. Field Museum gratefully acknowledges the cordial co-operation of the international exchange bureau in effecting deliveries.

The publications held for the present time, but destined for foreign distribution at the end of the war, total 6,899. These books, together with 156 maps, have been packed in 2,229 addressed envelopes and 383 wrapped packages, and are stored in eighteen large boxes.

For future sales and other distribution, 21,989 copies of various publications and leaflets, and 768 maps, were wrapped in packages, labeled, and stored in the stock room.

One new leaflet was added to the Botany Series—*The Story of Food Plants*, by Dr. B. E. Dahlgren, Chief Curator of Botany, as illustrated in Field Museum by a series of murals painted by Julius Moessel. Reproductions of the murals appear in the leaflet, one of them from a photograph in natural colors by Mr. Clarence B. Mitchell, the Museum's Research Associate in Photography.

To the Anthropology Series of Leaflets was added *Ancient Seals of the Near East*, by Richard A. Martin, Curator of Near Eastern Archaeology. The leaflet contains collotype plates of certain exhibits in the new Hall of Babylonian Archaeology (Hall K).

The sales of *The Races of Mankind* and *Prehistoric Man* totaled 1,410 copies, again exceeding the number of sales of any other two leaflets, as has been the case each year since these two booklets first were published in 1933.

The total number of post card sales during 1940 was 83,050, of which 8,904 were grouped into 506 sets.

The year's production of the Division of Printing included twenty-five new numbers in the Museum's regular publication series. These comprised 2,096 pages of type composition. Five of these were anthropological in subject matter, nine botanical, three geological, seven zoological, and one was the *Annual Report of the Director* for 1939. The aggregate number of copies of these printed by Field Museum Press was 25,426. One botanical index consisting of 26 pages (827 copies) and one new number in the Museum Technique Series consisting of 22 pages (927 copies) also were printed. Two new leaflets were issued, one on a botanical and one on an anthropological subject, and one botanical leaflet was reprinted. The number of pages in these three leaflets was 108 and the copies aggregated 6,460. A reprint of the nineteenth edition, and a revised edition (the twentieth) of the *General Guide*, consisting of 56 pages and ten illustrations each, were issued, followed by a reprint of the latter, the three printings totaling 11,000 copies. A reprint of the eighth edition and printing of the ninth edition of the *Handbook of Field Museum*, each containing 76 pages, totaled 3,590 copies. An anthropological Memoir consisting of 284 pages was issued. The total number of pages printed in all books was 2,856, and the total of copies issued was 48,051.

Miscellaneous job work, the total of which exceeded that of any previous year, consumed a large part of the time in the Division. Of major importance was the printing of twelve issues of *Field Museum News*, which is eight pages per issue, with an average of 5,200 copies a month. Exhibition labels printed for all Departments of the Museum during the year reached a total of 5,473. Increased efficiency and improved quality in the printing of labels was obtained by the purchase during the year of a new and modern type-casting machine. Other impressions, including Museum stationery, posters, lecture schedules, post cards, etc., brought the total for the year to 1,174,799.

A detailed list of publications follows:

PUBLICATION SERIES

- 463.—Botanical Series, Vol. 22, No. 1. Studies of American Plants—IX. By Paul C. Standley. January 26, 1940. 62 pages. Edition 829.
- 464.—Zoological Series, Vol. 24, No. 11. A Tentative Classification of the Palearctic Unionids. By Fritz Haas. January 30, 1940. 28 pages. Edition 867.
- 465.—Anthropological Series, Vol. XXV, No. 3. Craniometry of New Guinea. By Wilfrid D. Hambly. February 29, 1940. 210 pages, 44 plates, 15 text-figures, 9 drawings, 1 map. Edition 629.
- 466.—Botanical Series, Vol. IX, No. 4. Flora of the Aguan Valley and the Coastal Regions Near La Ceiba, Honduras. By T. G. Yuncker. March 22, 1940. 104 pages, 8 text-figures. Edition 888.
- 467.—Botanical Series, Vol. 21. Travels of Ruiz, Pavón, and Dombey in Peru and Chile (1777–1788). By Hipólito Ruiz, with an epilogue and official documents added by Agustín Jesús Barreiro. Translation by B. E. Dahlgren. March 28, 1940. 372 pages, 2 maps. Edition 815.
- 468.—Report Series, Vol. 12, No. 1. Annual Report of the Director for the Year 1939. January, 1940. 174 pages, 12 plates. Edition 5,631.
- 469.—Anthropological Series, Vol. 30, Part I, No. 1. The Anthropology of Iraq. The Upper Euphrates. By Henry Field. May 31, 1940. 224 pages, 10 text-figures, 48 plates, 1 map. Edition 662.
- 470.—Zoological Series, Vol. 24, No. 12. Notes on Texan Snakes of the Genus *Salvadora*. By Karl P. Schmidt. May 31, 1940. 8 pages, 3 text-figures. Edition 939.
- 471.—Zoological Series, Vol. 24, No. 13. A New Toad from Western China. By Karl P. Schmidt and Ch'eng-Chao Liu. May 31, 1940. 4 pages, 1 text-figure. Edition 967.
- 472.—Botanical Series, Vol. 22, No. 2. Studies of American Plants—X. By Paul C. Standley. June 12, 1940. 68 pages. Edition 839.
- 473.—Geological Series, Vol. 8, No. 1. A New Turtle of the Genus *Podocnemis* from the Cretaceous of Arkansas. By Karl P. Schmidt. June 29, 1940. 12 pages, 5 text-figures. Edition 976.
- 474.—Zoological Series, Vol. 24, No. 14. A New Venezuelan Honey Creeper. By Emmet R. Blake. June 29, 1940. 4 pages. Edition 825.
- 475.—Zoological Series, Vol. 24, No. 15. A New Savannah Sparrow from Mexico. By Sidney Camras. June 29, 1940. 2 pages. Edition 860.
- 476.—Anthropological Series, Vol. 32, No. 1. The Su Site. Excavations at a Mogollon Village, Western New Mexico, 1939. By Paul S. Martin. June 29, 1940. 98 pages, 42 text-figures and 11 maps. Edition 732.

- 477.—Zoological Series, Vol. XXII, No. 5. Notes on the Anatomy of the Babirusa. By D. Dwight Davis. August 6, 1940. 52 pages, 24 text-figures. Edition 795.
- 478.—Botanical Series, Vol. 22, No. 3. Studies of American Plants—XI. By Paul C. Standley. September 10, 1940. 88 pages. Edition 841.
- 479.—Anthropological Series, Vol. 27, No. 2. Notes on Skidi Pawnee Society. By George A. Dorsey and James R. Murie. Prepared for publication by Alexander Spoehr. September 18, 1940. 54 pages, 1 text-figure. Edition 639.
- 480.—Botanical Series, Vol. 22, No. 4. Studies of Central American Plants—I. By Paul C. Standley and Julian A. Steyermark. September 30, 1940. 104 pages, 2 text-figures. Edition 816.
- 481.—Zoological Series, Vol. XXII, No. 6. Studies of the Anatomy of the Extra-hepatic Biliary Tract in Mammalia. By Stewart Craig Thomson. October 31, 1940. 18 pages. Edition 902.
- 482.—Botanical Series, Vol. 22, No. 5. Studies of Central American Plants—II. By Paul C. Standley and Julian A. Steyermark. October 31, 1940. 74 pages, 1 plate. Edition 842.
- 483.—Botanical Series, Vol. 22, No. 6. A New Genus of Compositae from Northwestern Alabama. By Earl Edward Sherff. December 24, 1940. 8 pages. Edition 897.
- 485.—Botanical Series, Vol. IX, No. 5. Studies of the Vegetation of Missouri—I. Natural Plant Associations and Succession in the Ozarks of Missouri. By Julian A. Steyermark. December 31, 1940. 180 pages, 45 text-figures. Edition 825.
- 486.—Geological Series, Vol. 8, No. 2. An Adiantine Litoptern from the Deseado Formation of Patagonia. Results of the Marshall Field Paleontological Expeditions to Argentina and Bolivia, 1922–27. By Bryan Patterson. December 31, 1940. 8 pages, 2 text-figures. Edition 875.
- 487.—Geological Series, Vol. 8, No. 3. The Status of *Progaleopithecus Ameghino*. By Bryan Patterson. December 31, 1940. 6 pages, 2 text-figures. Edition 875.
- Botanical Series, Vol. XVII. Index. April 2, 1940. 26 pages. Edition 827.

MEMOIR SERIES

- Anthropology Memoir, Vol. 5. Anasazi Painted Pottery in Field Museum of Natural History. By Paul S. Martin and Elizabeth S. Willis. December 31, 1940. 284 pages, 125 plates, 1 map. Edition 648.

MUSEUM TECHNIQUE SERIES

- No. 6.—Rubber Molds and Plaster Casts in the Paleontological Laboratory. By James H. Quinn. April 27, 1940. 22 pages, 7 text-figures. Edition 927.

LEAFLET SERIES

- Botany, No. 16. Fifty Common Plant Galls of the Chicago Area. By Carl F. Gronemann. 30 pages, 1 colored plate, 51 zinc etchings. (Reprint.) March 13, 1940. Edition 1,070.
- Botany, No. 25. The Story of Food Plants. By B. E. Dahlgren. 32 pages, including 15 text-figures, 1 colored plate, 2 maps. September, 1940. Edition 3,855.
- Anthropology, No. 34. Ancient Seals of the Near East. By Richard A. Martin. 46 pages, including text and text-figures with legends. June, 1940. Edition 1,535.

HANDBOOK SERIES

- Handbook. Information concerning the Museum—its history, building, exhibits, expeditions, endowments, and activities. Eighth edition. (Reprint.) February, 1940. 76 pages, 8 plates, 1 cover design. Edition 509.

Handbook. Information concerning the Museum—its history, building, exhibits, expeditions, endowments, and activities. Ninth edition. June, 1940. 76 pages, 8 plates, 1 cover design. Edition 3,081.

GUIDE SERIES

General Guide to Exhibits in Field Museum of Natural History. Nineteenth edition. 1938-39. (Reprint.) 56 pages, 9 text-figures, 1 cover design. Edition 1,500.

General Guide to Exhibits in Field Museum of Natural History. Twentieth edition. 1940. 56 pages, 9 text-figures, 1 cover design. Edition 7,000.

General Guide to Exhibits in Field Museum of Natural History. Twentieth edition. (Reprint.) 56 pages, 9 text-figures, 1 cover design. Edition 2,500.

PHOTOGRAPHY AND ILLUSTRATION

The production of the Division of Photography during 1940 totaled 21,738 items, which includes negatives, prints, bromide enlargements, lantern slides, transparencies, etc. A very small percentage of these were prints, enlargements, and slides for sales on orders received from the public, from publishers, and from other institutions, but well over 97 per cent were to fulfill requirements of the various departments and divisions of the Museum.

Of the total production, the Museum staff photographer and his assistant were responsible for 10,760 items. Workers assigned by the federal Work Projects Administration were responsible for the remainder, consisting chiefly of the making of prints of a routine character. These were largely prints of type specimens of plants for the Herbarium from negatives secured in Europe through the recently concluded ten-year project of the Department of Botany. Photographic work requiring special skill and attention was done by the Museum's own staff men.

The photographic files of the Museum now contain nearly 90,000 negatives, and the task of classifying, indexing, and numbering negatives and prints has become a major one, and a very urgently necessary one in order that a systematic order and full usefulness of this material may be maintained. This work, as for several years past, has been continued by clerical helpers furnished by the WPA, and during 1940 it involved approximately 80,000 items handled or operations performed.

A total of 720,378 prints was produced by the Museum Cotype during 1940. These included illustrations for publications and leaflets, covers for books and pamphlets, picture post cards, headings for lecture posters, and miscellaneous items.

The Museum Illustrator and his assistant performed a great amount of miscellaneous work, including the drawing of 74 illustra-

tions for publications, slides, labels, transparencies, etc.; the drawing, lettering, and coloring of 57 maps; the coloring of 279 stereopticon slides; the retouching of 134 photographs; the blocking of 127 photographic negatives, and such items as rough sketches for a book of colored photographs, cutting stencils, etching negatives, lettering, tinting photographs, tooling cuts, etc.

MAINTENANCE AND CONSTRUCTION

Comment has been made, in the Introduction to this Report, upon some of the most outstanding tasks undertaken during the year towards proper maintenance of the Museum building. Following is a summary of other principal accomplishments:

Seventeen window sashes and frames on the fourth floor were replaced. The entire third and fourth floor roofs, and the greater portion of the first floor covered skylights, were re-coated with fibered asphalt roofing. Worn linoleum in the Cafeteria and the passenger elevator was replaced. The Cafeteria floor and the rubber tile floor in Chauncey Keep Memorial Hall (Hall 3) were cleaned and rewaxed.

Walls were repaired and redecorated, general cleaning, painting, and repairs carried out, and new equipment was supplied in the office of the secretary to the President, the offices of the Director and his secretary, the Raymond Foundation office, the Lecture Hall, and various other parts of the building. The sashes and frames of the boiler room windows were repaired and painted, and the roof of this room was caulked. An area adjacent to Hall J was reconditioned for use as a children's cloak room.

Cases and screens were prepared for various special exhibits. The Museum's large information signs outside the building were repaired, cleaned, and reset. The flagpoles in front of the north terrace of the Museum were thoroughly reconditioned; the cast bronze balls surmounting them, 19 inches in diameter, and weighing 195 pounds apiece, were removed for the application of new gold leaf, after which they were reinstalled. The west pole, which had developed a slight lean, was straightened and reset; checking of the timber in both poles was "pointed up"; and both were repainted and equipped with new sheave bushings and halyards.

In the heating plant all four boilers were thoroughly cleaned, and necessary repairs made. Sixteen new tubes were installed in one boiler to comply with the insurance inspector's recommendations. The stoker control unit was overhauled. Dampers were gone over,

and the breeching and ash vent pipes were cleaned. New steel sheets and angles were purchased to rebuild the lower portion of the coal conveyor, and sixty feet of trough were replaced. Four new hoppers for the stokers were also built. A new ash pack elbow was installed in the ash conveyor. Under the contracts in force for some years, a total of 13,125,368 pounds of steam was furnished to the John G. Shedd Aquarium, 9,751,581 pounds to Soldier Field, and 11,526,884 pounds to the Chicago Park District Administration Building.

All motors were checked over and cleaned, and the steam pumps and vacuum pumps were repacked. Repairs involving replacements of parts were made where necessary.

The passenger elevator was equipped with a new control board, car switch, and door closers; similar equipment, and counterweight cables also, were installed on the freight elevator. The hydraulic elevator at the shipping and receiving room entrance was repacked, and a new rack and pinion were installed in its operating valve.

Fourteen radiators on the third floor were replaced to increase the heating efficiency in offices and work rooms. Hot water lines were extended to the wash rooms of the curators and to the taxidermy shop, a total of 300 feet of pipe and the necessary fittings being used for this purpose. Much other new plumbing was installed as a result of changes in office arrangements, or the deterioration of old equipment in lavatories, offices, and working quarters. Included are four new drinking fountains on the first floor. Gas lines and air lines also were extended to new areas, and outlets and equipment installed. Extensive changes made in the Plant Reproduction Laboratories necessitated the rerouting of twenty-five feet of steam main.

The program, instituted in 1939, of improving illumination in exhibition halls, offices, and workshops by application of techniques employing the new types of tubular fluorescent lights, was continued during 1940 in various parts of the building. Altogether, 1,316 fluorescent lighting units were installed during the year. Of these, 468 were used in the Hall of Egyptian Archaeology (Hall J), 429 in Ernest R. Graham Hall (Hall 38), and 207 in George T. and Frances Gaylord Smith Hall (Hall 24). This change made possible the removal of the old ceiling fixtures and resulted in much improvement in the appearance of the halls.

Fluorescent lighting was provided also for the friezes and the Kish gateway in the Hall of Babylonian Archaeology (Hall K),

the built-in case in Hall L (Asiatic Ethnology), the new fur seal case in Hall N, four new cases in Joseph N. Field Hall (Hall A—Melanesian Ethnology), the water buffalo case in Carl E. Akeley Memorial Hall (Hall 22), ten floor cases for Frederick J. V. Skiff Hall (Hall 37), and the alpine flora case in Martin A. and Carrie Ryerson Hall (Hall 29).

The new reading room in preparation for the Library was completely rewired, and provided with floor outlets and base plugs. Fluorescent lights were installed in coves around the ceiling. Provision was also made for stack lighting. Nine fluorescent units were installed in Room 87 on the third floor, and six portable lamps were made for the Department of Zoology. The Division of Printing was equipped with fluorescent lights, and a number of individual installations were made throughout the building.

Frederick J. V. Skiff Hall (Hall 37) was completely rewired to provide outlets for individually lighted cases. A total of 600 feet of new raceway and 1,500 feet of wire were required for this purpose.

A new power feeder and distributing panel box were installed in the Division of Printing to care for the additional load required by a new typesetting machine purchased during the year. Various repairs and improvements were made on presses and other machinery used in the Division.

The mezzanine storage space on the fourth floor was wired for lights, 150 feet of conduit and thirty outlets being installed. Ten fixtures in the Lecture Hall were replaced with a more efficient type. New circuits were run into several work rooms to supply current required for new equipment. Twenty-eight drop cords were installed throughout the third floor.

Work was begun on the necessary equipment for the "X-raying a mummy" exhibit planned for Hall J. One hundred and fifty feet of drain pipe, 80 feet of water pipe, and 350 feet of conduit and feeder cables for electricity are required for this project.

Included among special services performed for the Department of Anthropology were completion and installation of four cases in Joseph N. Field Hall (Hall A) for exhibits of tall carved ancestral figures and drums from Melanesia. A new exhibition case was constructed for the Hall of Babylonian Archaeology (Hall K), and shields for light tubes were placed on case tops to illuminate the stucco ornaments near the ceiling. Construction was begun on a new storage room on the third floor. Three hundred and fifteen steel storage

shelves and supports were installed in Room 59, and ten units of double compartment card files in Room 52.

Work rooms formerly known as Nos. 21, 22, and 23 were altered into two large rooms for use in the plaster work of the Department of Botany. Two eight-door and eleven six-door steel herbarium cases were installed in Rooms 8 and 11.

For the Department of Geology, twelve exhibition cases were built and six remodeled for paleontological exhibits. Much other construction was involved in the reinstallation of this and Frederick J. V. Skiff Hall (Hall 37). Six new cases with screens were built for Hall 36. Reconstruction of the Gem Room (H. N. Higinbotham Hall—Hall 31) was begun in October and is to be completed early in 1941. Contracts have been let for eight new floor and sixteen wall cases, as well as for a frame for a Tiffany glass window. An elaborate scheme of fluorescent lighting was designed to light individual cases. Thirty-five steel storage cases and trays were installed in Rooms 108 and 116.

Construction was completed on two built-in cases in Albert W. Harris Hall (Hall 18) for the Department of Zoology. A large case was built and installed in Carl E. Akeley Memorial Hall (Hall 22) for a forest hog exhibit. A case for tree snails was constructed and hung on the north wall of the Hall of Lower Invertebrates (Hall M). All of the "closed base" cases along the north side of Hall 21 (Systematic Exhibits of Birds) were fitted with new "open bases" similar to those on the south side of the hall. In Hall O, in preparation for fish exhibits, label frames were made, doors providing access to cases were hung, and composition board floor was fitted.

A new storage area, work shop, and office were constructed on the east side of the fourth floor for the Division of Lower Invertebrates. Steel I-beams and gratings were set for mezzanine storage. Forty-nine steel storage cases were set in place, and fitted with 2,220 "half-width" trays. Five steel storage cases were purchased and set in Rooms 76, 77, and 78, for the Divisions of Birds and Mammals. Thirty-four wooden "side racks" and thirty center diaphragms were constructed and fitted to these cases, and 2,100 half-width trays were installed. A new work room was constructed at the southwest corner of the fourth floor for the use of the ornithologists. A room in the southeast section of the ground floor was cleaned, painted, and fitted with shelving and wire screen partitions for the safe storage of equipment used on expeditions. Alterations in Rooms 87, 88, and 90 (Division of Herpetology) were com-

pleted. Two hundred and fifty-four trays were made for new storage cases in Room 87.

For the N. W. Harris Public School Extension a wooden base was made to accommodate a heavy press installed in Room 98. Three additional racks for storage of Harris Extension cases were constructed in the storage room on the ground floor.

PUBLIC RELATIONS

The outstanding publicity received by Field Museum during 1940 was that occasioned by the opening of the new Hall of Babylonian Archaeology (Hall K). This resulted in several full pages of photographs, and descriptive articles, in every one of the principal Chicago newspapers, both in news sections and art pages. In the *Chicago Daily News* a rotogravure page was devoted to it, in addition to black-and-white treatment. The material was used widely in newspapers all over this country, and also in the *Illustrated London News*, a periodical of importance because of the excellence of its pictorial reproductions and the world-wide distribution which it receives.

Among the other more notable pieces of publicity during the year were: several other displays in the *Illustrated London News*; a leading article in the Science Section of the widely circulated news-magazine *Time* on the work of Field Museum's "Layman Lecturer," Mr. Paul G. Dallwig, and a rewritten version of the same in London's *Cavalcade, the British News-Magazine*; several other articles in *Time*; the newspaper articles and photographs on the new series of mural paintings (The Story of the World's Food Plants) by Julius Moessel, in Hall 25 of the Department of Botany; an article in *Commerce* (published by the Chicago Association of Commerce) on Field Museum's services to business and industry; daily publicity in the *Chicago Daily Times* over a period of several weeks as a result of a contest operated by that newspaper for which Dr. Wilfred H. Osgood, Chief Curator of Zoology, acted as a judge, and many columns of unusual pictures and comment as a result of anthropometric experiments conducted by the Museum's Department of Anthropology on Maurice Tillet, famous French wrestler known as "the Angel." The Tillet item was the subject of a newsreel made at the Museum by Metro-Goldwyn-Mayer, and exhibited throughout the nation. While a little out of the normal scope of Museum publicity, this was truly "a press agent's dream" and attracted much public attention.

Continuing the customary efforts to keep the public thoroughly informed at all times of Field Museum's manifold activities, the

Public Relations Counsel prepared, in all, 345 news releases. These were distributed through the usual channels, and were published in the several great metropolitan dailies of Chicago, and in many other media. All releases with more than local interest were carried in the wire and mail services of such national and international news agencies as the Associated Press, United Press, International News Service, Science Service, Wide-World Photos, etc. In many cases photographs accompanied news releases; in other cases, editors assigned their staff writers and photographers to follow up the stories submitted by the Museum and expand upon them. Occasionally a Museum story was even made the subject of an editorial.

Attention was given in the Museum's publicity efforts not only to the metropolitan newspapers and nation-wide news agencies, but also to reaching the many groups who read several hundred community papers published for the populations of distinct neighborhoods within the city, foreign language newspapers circulating among Chicagoans of a wide variety of national origins, and the principal papers published in medium-sized cities of Illinois and neighboring states, particularly those within the Chicago suburban area. News releases from the Museum covered all such subjects as expeditions, research, new exhibits, lectures, children's programs, and miscellaneous activities of the institution. For their co-operation in keeping the public informed regarding the Museum, special appreciation is due to the *Chicago Daily News*, *Chicago Daily Times*, *Chicago Tribune*, *Chicago Herald-American*, *Chicago Journal of Commerce*, and *Downtown Shopping News*. Among local weekly periodicals giving the Museum much desirable publicity were the *Downtown Free Press*, *National Corporation Reporter*, and *This Week in Chicago*.

The monthly bulletin, *Field Museum News*, published for the Members of the Museum, was continued in the enlarged form inaugurated in the preceding year, and every effort was made constantly to improve the quality of articles and illustrations. Two issues, September and December, were graced by four-color illustrations of selected mural paintings from the series by Julius Moessel (Mexican Market Scene, and Camel Caravan North of the Persian Gulf). This was made possible by use of some of the special process plates generously presented by Mr. Clarence B. Mitchell, the Museum's Research Associate in Photography, who was responsible also for making the artistic color photographs. Such plates, provided by Mr. Mitchell, had made possible previous color work in the *News* in 1938 and 1939.

The 1940 volume of the *News* constituted the eleventh since publication of the periodical was begun and, as in past years, copies were distributed to all Members promptly and regularly at the beginning of each month. This bulletin, in addition to keeping the membership informed about Museum activities, supplements the mimeographed news releases circulated by the Division of Public Relations, and many of the articles in it are reprinted or quoted in newspapers and magazines. It also serves as an exchange medium in the Museum's relations with similar institutions all over the world.

The arrangements with the General Electric X-ray Corporation whereby an Egyptian mummy was lent for display in that company's fluoroscopic exhibit at the New York World's Fair, were renewed for the second year of the fair. The exhibit was improved, and the Museum was featured more prominently by the addition of a lecture which was heard by millions of visitors to the fair from special records automatically transmitted by a sound machine synchronized with the operation of the X-ray apparatus. Following the close of the fair, the General Electric Company presented the fluoroscopic equipment to the Museum, and it will be installed with the mummy as a feature of the Egyptian Hall (Hall J) next year. It alternately shows the mummy's exterior and the skeleton inside.

Notable as a publicity project, as well as for its educational value, was the series of radio programs presented by the Museum under the title "How Do You Know?" This series of weekly dramatized broadcasts on scientific subjects, which ran from January 25 to June 13, was made possible by the co-operation of the National Broadcasting Company and the University Broadcasting Council. The series was presented from coast to coast over stations on the Blue Network of that company. Members of the Museum staff contributed the scientific data upon which the programs were based, and expert radio technique in presentation of the programs was furnished by the National Broadcasting Council, which provided a skilled script writer, Mr. William C. Hodapp, and actors and actresses for the casts required in the various dramatizations. The programs were expertly produced under the supervision of Miss Judith Waller, Chicago Educational Director for the National Broadcasting Company.

The Museum received further publicity through other broadcasts on various stations and networks, and through a series of television programs presented in co-operation with the Zenith Radio Corporation. Attention was directed to this institution likewise, as

in past years, by placards advertising Museum lectures and exhibits. These were displayed in cars and stations of various transportation companies, and in hotels, department stores, libraries, travel bureaus, office buildings, schools, and other public institutions. Through these same organizations, many thousands of folders announcing the Sunday afternoon lectures presented by Mr. Paul G. Dallwig, the Layman Lecturer, and other folders containing information about Museum exhibits, were distributed both to residents of Chicago and travelers visiting the city. Special appreciation for their co-operation in advertising the Museum is due to the Chicago, Aurora and Elgin Railroad, the Chicago, North Shore and Milwaukee Railroad, the Chicago Rapid Transit Lines, the Chicago and North Western Railway, the Illinois Central System, and the Chicago Surface Lines. Following its custom of many years, the Museum sent invitations and folders to the delegates attending several hundred conventions held in Chicago.

The Museum was represented during the year by its Public Relations Counsel at the meetings of the newly formed Chicago Conference on Association Publicity. This is an organization whose purpose is to promote better press and radio relations for civic, educational, public health and welfare, and other non-commercial institutions.

DIVISION OF MEMBERSHIPS

It is most gratifying again to report an increase in the number of Museum Members. During 1940 there were 411 new Members enrolled, as against a loss of 362 Members incurred through transfers, cancellations, and deaths. The total net number of memberships as of December 31, 1940, was 4,225. An expression of deep appreciation and gratitude is due the many Members who have continued their loyal support of the institution, and also to the new Members who have become associated with the cultural activities of the Museum. The increasing burdens of taxation imposed on citizens today present an important difficulty, and make all the more laudable the contributions of those who continue their support of civic activities such as museums. The continuance and expansion of the educational program of this institution is in large part dependent upon the support of Members.

For their past support and interest, an expression of appreciation is due those Members who found it necessary to discontinue their memberships, and an invitation is extended to them to avail

themselves of the opportunities afforded by membership whenever they may again find it convenient to enroll as Members of Field Museum.

The following tabulation shows the number of names on the list in each of the membership classifications at the end of 1940:

Benefactors.....	23
Honorary Members.....	12
Patrons.....	27
Corresponding Members.....	7
Contributors.....	124
Corporate Members.....	48
Life Members.....	250
Non-Resident Life Members.....	13
Associate Members.....	2,398
Non-Resident Associate Members.....	8
Sustaining Members.....	10
Annual Members.....	1,805
Total Memberships.....	<u>4,225</u>

The names of all persons listed as Members during 1940 will be found on the pages at the end of this Report.

In the pages which follow are submitted the Museum's financial statements, lists of accessions, *et cetera*.

CLIFFORD C. GREGG, *Director*

COMPARATIVE ATTENDANCE STATISTICS AND DOOR RECEIPTS

FOR YEARS 1939 AND 1940

	1940	1939
Total attendance.....	1,450,685	1,410,454
Paid attendance.....	80,888	83,518
Free admissions on pay days:		
Students.....	76,722	76,651
School children.....	85,249	92,946
Teachers.....	3,181	3,084
Members.....	1,039	1,156
Admissions on free days:		
Thursdays (52).....	252,867	(52) 212,455
Saturdays (52).....	376,768	(52) 379,337
Sundays (52).....	578,971	(52) 561,307
Highest attendance on any day (June 4).....	51,247	(June 2) 58,002
Lowest attendance on any day (March 18)...	121	(January 30) 8
Highest paid attendance (September 2).....	3,291	(September 4) 2,442
Average daily admissions (364 days).....	3,963	(368 days) 3,885
Average paid admissions (210 days).....	385	(207 days) 403
Number of guides sold.....	10,002	8,607
Number of articles checked.....	23,616	22,874
Number of picture post cards sold.....	33,050	92,325
Sales of publications, leaflets, handbooks, portfolios, and photographs.....	\$5,504.33	\$4,819.18

COMPARATIVE FINANCIAL STATEMENTS

FOR YEARS 1939 AND 1940

INCOME		1940	1939
Endowment Funds.....		\$203,608.49	\$198,455.79
Funds held under annuity agree- ments.....		27,807.92	25,728.52
Life Membership Fund.....		11,530.05	10,659.18
Associate Membership Fund...		12,927.91	11,697.08
Chicago Park District.....		58,130.33	86,098.85
Annual and Sustaining Member- ships.....		12,035.00	11,555.00
Admissions.....		20,222.00	20,879.50
Sundry receipts.....		17,835.43	20,012.66
Contributions, general purposes.		1,015.00	298.65
Contributions, special purposes (expended <i>per contra</i>).....		28,061.45	55,399.14
Special Funds—part expended this year for purposes designated (included <i>per contra</i>).....		11,822.93	14,457.31
		<u>\$405,046.51</u>	<u>\$455,236.68</u>
EXPENDITURES			
Collections.....		26,490.19	33,256.62
Operating expenses capitalized and added to collections...		41,701.84	43,749.41
Expeditions.....		9,983.95	14,549.75
Furniture, fixtures, etc.....		69,666.12	18,247.70
Wages capitalized and added to fixtures.....		7,645.21	8,766.55
Pensions and Group Insurance..		43,078.64	49,281.28
Pensions—past service liability.			220,096.71
Departmental expenses.....		40,994.29	42,019.41
General operating expenses....		319,212.39	318,676.76
Building repairs and alterations		66,328.76	37,311.66
Annuities on contingent gifts...		29,370.60	29,506.39
Paid on bank loans.....			26,600.00
Reserve for repairs and deprecia- tion.....		35,000.00	25,000.00
		<u>\$689,971.99</u>	<u>\$872,062.24</u>
Deficit..		\$284,925.43	\$416,825.56
Contribution by Mr. Marshall Field.....		283,895.94	415,138.78
Net Deficit..		<u>1,029.54</u>	<u>1,686.78</u>

THE N. W. HARRIS PUBLIC SCHOOL EXTENSION

	1940	1939
Income from Endowment.....	\$20,376.62	\$18,158.00
Operating Expenses.....	17,205.21	16,509.32
Balance	<u>\$ 3,171.41</u>	<u>\$ 1,648.68</u>

LIST OF ACCESSIONS

DEPARTMENT OF ANTHROPOLOGY

BUNNELL, DWIGHT W., Puyallup, Washington: skull from a "burial ground"—Parksville, Vancouver Island, British Columbia (gift).

CENOZOIC RESEARCH LABORATORY, Peking, China: colored cast of *Sinanthropus pekinensis*, in two pieces—Peking, China (gift).

CURACAO COMMISSION OF 1893 WORLD'S FAIR: 1 bracelet made of German coins, 1 solid silver bracelet, 1 charm "gold heart," 1 fob chain made of German coins (gift).

EASTMAN, SIDNEY C., ESTATE OF, Chicago: 1 beaded pipe bag (Sioux), 1 pipe bag, 1 large pitch-covered basket (Great Basin Tribes) (gift).

FIELD, DR. HENRY, Chicago: 50 pottery specimens (16 sherds)—Trans-Jordan; 24 ethnological specimens—northern Iraq; 60 artifacts and animal bones—Spy, Belgium (gift).

FIELD, STANLEY, Chicago: 17 photographs of Ward African bronzes—Africa (gift).

FISH, MRS. FREDERICK S., New York: 2 stone lions, eighteenth century—Peking, China (gift).

GENERAL ELECTRIC X-RAY CORPORATION, Chicago: Complete X-ray equipment, fluoroscopic screen and accessories for an exhibit in which an Egyptian mummy will be publicly X-rayed.

GILA PUEBLO, Globe, Arizona: 8 stone artifacts, Cochise types; 72 stone, bone and pottery artifacts from Hohokam culture, all periods; some pottery in sherd form—Snaketown, Arizona (exchange); 20 stone artifacts—hand-stones, blades, scrapers, handaxes, knives—near Lake Cochise, Arizona (exchange).

GROW AND CUTTLE, Chicago: 2 Sung and 2 Ch'ing porcelains, and 1 piece of Ming or early Ch'ing lacquer—China; 7 ceramic specimens—China (gift).

LAPHAM, DR. ANNA ROSS, Chicago: 1 wooden comb, 1 wooden ladle or stirrer—Djukas, Dutch Guiana (gift).

LINDGREN, DR. ETHEL-JOHN, Cambridge, England: 1 pair "elk-skin" leather gloves—Manchuria, China (gift).

MACALLISTER, T. H., Chicago: 2 metates without grooves, and 4 manos—Chaco Canyon, New Mexico (gift).

MUSEUM OF SCIENCE AND INDUSTRY, Chicago: 1 kayak—Eskimo, Alaska (gift).

SCHAAP, R., Batavia, Netherlands East Indies: 2 palaeolithic scrapers, chalcolithic beads, neolithic artifacts and unfinished stone rings (7)—West Java, Netherlands East Indies (exchange).

UNIVERSITY OF ILLINOIS, College of Dentistry, Chicago: 1 skull of male, white American (gift).

VALENTINE, LOUIS L., ESTATE OF, Chicago: 220 ivories—China, Japan, Europe, Alaska (gift).

WELLS, C. EDWARD, New York: bronze jar—Peking, China (purchase).

WILLETT, DR. R. C., Peoria, Illinois: a cast of a child's mandible from burial mound, and cast of an Aztec figurine—Fulton County, Illinois, and Mexico (gift).

WILSON, SAMUEL E., Chicago: 30 neolithic sherds—central Ahansi province, China, near T'ai-ky and Yu-ta hu (gift); 6 Chinese neolithic stone implements—central Shansi province, China, near T'ai-ky (exchange).

DEPARTMENT OF BOTANY—ACCESSIONS

ACKERMANN, EVAN, Chicago: 1 plant specimen (gift).

ADCOCK, CAPTAIN THOMAS A., College Station, Texas: 3 wood specimens (exchange).

AGUILAR G., JOSÉ IGNACIO, Guatemala City, Guatemala: 123 specimens of Guatemalan plants (gift).

ALLEN, DAVID, Chicago: 1 plant specimen (gift).

ALLEN, PAUL H., Balboa, Canal Zone: 31 specimens of Panama plants (gift).

APOLINAR-MARÍA, REV. BROTHER, Bogotá, Colombia: 171 specimens of Colombian plants (gift).

ARNOLD ARBORETUM, Jamaica Plain, Massachusetts: 3,513 plant specimens (exchange).

AVELLAN, JOAQUIN, Los Caobos, Caracas, Venezuela: 9 boards of Venezuelan woods (gift).

BADINI, PROFESSOR JOSÉ, Ouro Preto, Minas Geraes, Brazil: 87 specimens of Brazilian plants (gift).

BAILEY, DR. LIBERTY HYDE, Ithaca, New York: 3 plant specimens (gift).

BATES, GLEN F., Fort Lauderdale, Florida: 3 fruits, 3 plant specimens (gift).

BAUER, BILL, Webster Groves, Missouri: 26 plant specimens (gift).

BEAL, DR. J. M., Chicago: 3 plant specimens (gift).

BENKE, HERMANN C., Chicago: 191 specimens of plants from Illinois and Wisconsin, 83 cryptogamic specimens (gift).

BEUTAS, JOSEPH H., Chicago: 1 fungus specimen (gift).

BOLD, DR. HAROLD C., New York: 3 algal specimens (gift).

BOTANICAL MUSEUM, HARVARD UNIVERSITY, Cambridge, Massachusetts: 10 specimens of Mexican plants (exchange).

BRACELIN, MRS. H. P., Berkeley, California: 8 specimens of Mexican plants (gift).

BRINKER, REV. ROBERT, St. Louis, Missouri: 1 algal specimen (gift).

BRUNEL, DR. JULES, Montreal, Canada: 88 specimens of algae (gift).

BUTCHER, DEVEREUX, New York: 1 photograph, 17 cryptogamic specimens (gift).

CABRERA, PROFESSOR ANGEL L., La Plata, Argentina: 129 specimens of plants from Argentina (exchange).

CALDERON, DR. SALVADOR, San Salvador, El Salvador: 11 plant specimens (gift).

CALIFORNIA ACADEMY OF SCIENCES, San Francisco, California: 100 specimens of American plants (exchange).

CHANDLER, A. C., St. Louis, Missouri: 3 plant specimens (gift).

CHANEY, DR. RALPH W., Berkeley, California: 1 plant specimen (gift).

CLAYTON, J. PAUL, JR., Winnetka, Illinois: 2 specimens of fungus (gift).

CLOKEY, IRA W., South Pasadena, California: 342 plant specimens (exchange).

COOKE, W. B., Cincinnati, Ohio: 9 cryptogamic specimens (gift).

COOPER, I. C. G., Westerleigh, Staten Island, New York: 6 cryptogamic specimens (gift).

CORNELL UNIVERSITY, Department of Botany, Ithaca, New York: 69 specimens of Washington plants (exchange).

CUATRECASAS, DR. JOSÉ, Bogotá, Colombia: 1 plant specimen (gift).

DAHLGREN, DR. B. E., Chicago: 2 specimens of Brazilian plants (gift).

DAILY, WILLIAM A., Cincinnati, Ohio: 441 cryptogamic specimens (gift).

DANIEL, REV. BROTHER H., Medellín, Colombia: 41 specimens of Colombian plants (gift).

DAVIS, PROFESSOR RAY J., Pocatello, Idaho: 5 plant specimens (gift).

DEAM, CHARLES C., Bluffton, Indiana: 65 plant specimens (gift).

DICKINSON, ROBERT B., Johannesburg, South Africa: 1 economic specimen (gift).

DIXON, ROYAL, Houston, Texas: 1 plant specimen (gift).

DREW, WILLIAM B., Columbia, Missouri: 8 specimens of algae (gift).

EDMONSTON, W. T., New Haven, Connecticut: 6 cryptogamic specimens (gift).

EISENBERG, WILLIAM V., Washington, D.C.: 2 plant specimens (gift).

ELIAS, REV. BROTHER, Caracas, Venezuela: 248 specimens of plants from Venezuela and Colombia (gift).

FARLOW HERBARIUM, Cambridge, Massachusetts: 2 algal specimens (gift).

FELD, DR. HENRY, Chicago: 22 specimens of plants from Georgia, 21 cryptogamic specimens (gift).

FIELD MUSEUM OF NATURAL HISTORY: Collected by Donald Richards and Dr. Francis Drouet (Field Museum Expedition to Sonora and Southwestern United States, 1939-40): 12,500 specimens of cryptogamic plants, 2,500 specimens of vascular plants.

Collected by Colin C. Sanborn (Magellanic Expedition of Field Museum): 1 plant specimen from Chile.

Collected by Paul C. Standley, Dr. Francis Drouet, and Dr. Julian A. Steyermark: 86 specimens of cryptogamic plants.

Collected by Dr. Julian A. Steyermark (Field Museum Expedition to Guatemala, 1939-40): 25,551 speci-

mens of Guatemalan plants, 1 plant specimen from Illinois.

Collected by Llewelyn Williams: 455 specimens of Venezuelan plants, 65 wood specimens, 14 specimens of cryptogamic plants.

Transferred from the Department of Anthropology: 18 economic specimens.

Transferred from the Division of Photography: 70 photographic prints.

Transferred from the Department of the N. W. Harris Public School Extension: 3 plant specimens.

Purchases: 5,900 cryptogamic specimens; 326 plant specimens—Costa Rica; 948 plant specimens—Ecuador; 339 plant specimens—Panama; 544 plant specimens—South America.

FISHER, GEORGE L., Houston, Texas: 118 specimens of Texas plants (gift).

FLORISTS' PUBLISHING COMPANY, Chicago: 1 plant specimen (gift).

FOSBERG, DR. F. RAYMOND, Arlington, Virginia: 85 plant specimens, 257 cryptogamic specimens (exchange).

FREY, A., Chicago: 1 fungus specimen (gift).

FULLER, DR. GEORGE D., Chicago: 67 specimens of Illinois plants (gift).

FULTON, W. H., Rockford, Illinois: 5 plant specimens (gift).

GARFIELD PARK CONSERVATORY, Chicago: 48 specimens of cultivated plants (gift).

GARRETT, PROFESSOR ARTHUR O., Salt Lake City, Utah: 83 plant specimens (gift).

GENTRY, HOWARD SCOTT, Tucson, Arizona: 54 specimens of Mexican plants (gift).

GILES, GEORGE H., Wilsonville, Nebraska: 75 specimens of algae (exchange).

GRAHAM, DR. V. O., Chicago: 7 specimens of fungi (gift).

GRAY HERBARIUM, Cambridge, Massachusetts: 1,740 plant specimens, 11 photographic prints (exchange).

GROESBECK, DR. M. J., Porterville, California: 253 specimens of algae (gift).

GRONEMANN, CARL F., Elgin, Illinois: 1 plant specimen (gift).

GUARRERA, S. A., Buenos Aires, Argentina: 14 specimens of algae (gift).

GUEST, EDWIN, Kuala Lumpur, Federated Malay States: 10 economic specimens (gift).

HAMBLETON, MISS ELIZABETH MCM., Chicago: 2 algal specimens (gift).

HERMANN, DR. F. J., Washington, D.C.: 93 plant specimens (exchange).

HILLS, MISS ALICE L., Chicago: 1 plant specimen (gift).

HINCKLEY, L. C., Marfa, Texas: 81 specimens of Texas plants (gift).

HODGE, DR. CHARLES, Philadelphia, Pennsylvania: 2 algal specimens (gift).

HOLLENBERG, DR. G. J., Redlands, California: 85 specimens of algae (gift); 22 specimens of algae (exchange).

HORTON, SISTER M. MARCELLINE, Grand Rapids, Michigan: 121 specimens of plants from New Mexico (gift).

HUDSON, MRS. A. E., White Plains, New York: 106 economic specimens from Persia and Arabia (gift).

HUPP, E. R., Indianapolis, Indiana: 2 fungus specimens (gift).

HURT, J. R., Columbia, Missouri: 44 specimens of algae (gift).

HUTCHINSON, J. B., Trinidad, British West Indies: 1 plant specimen (gift).

ILLINOIS STATE MUSEUM, Springfield, Illinois: 239 specimens of Illinois plants (gift).

INSTITUTO BOTÁNICO, Bogotá, Colombia: 163 specimens of Colombian plants (exchange).

INSTITUTO DE BOTÁNICA DARWINION, San Isidro, Argentina: 2 plant specimens (exchange).

JOHNSTON, DR. JOHN R., Chimaltenango, Guatemala: 55 specimens of plants from Guatemala (gift).

JOHNSTONE, DR. G. R., Los Angeles, California: 1 algal specimen (gift).

JUNGE, DON CARLOS, Concepción, Chile: 1 plant specimen (gift).

KEARNEY, DR. T. H., Washington, D.C.: 9 plant specimens (gift).

KELLY, MISS ISABEL, Villa Obregon, Mexico: 2 plant specimens (gift).

KENDALL, MRS. B. A., Elburn, Illinois: 1 plant specimen (gift).

KHANNA, DR. L. P., Rangoon, Burma: 225 specimens of algae (gift).

KING, LAWRENCE J., Richmond, Indiana: 69 specimens of algae (gift).

KLEEREKOPER, DR. HERMAN, São Paulo, Brazil: 45 specimens of algae (gift).

KOCH, HERBERT L., Princeton, Missouri: 7 plant specimens (gift).

KRUKOFF, BORIS A., Bronx Park, New York: 188 plant specimens (gift); 1,470 plant specimens, 3,078 wood specimens (exchange).

LACKEY, DR. JAMES B., Cincinnati, Ohio: 3 algal specimens (gift).

LANGLOIS, A. C., Nassau, Bahamas: 1 specimen of palm (gift).

LANKESTER, C. H., Cartago, Costa Rica: 1 plant specimen (gift).

LANOUILLE, MISS CÉCILE, Montreal, Canada: 1 algal specimen (gift).

LEWIS, MRS. B. B., Guatemala City, Guatemala: 70 plant specimens, 22 wood specimens (gift).

LINDAUER, DR. V. W., Keri Keri, Bay of Islands, New Zealand: 8 specimens of algae (gift).

LOUISIANA STATE UNIVERSITY, Department of Botany, University, Louisiana: 2 plant specimens (gift).

MCCANN, DR. L. P., Bogalusa, Louisiana: 1 specimen of lichen (gift).

MCCLURE, F. A., Canton, China: 85 wood specimens (exchange).

MCINTYRE, DR. B. B., Lexington, Kentucky: 14 specimens of algae (gift).

MADDOX, R. S., Jefferson City, Missouri: 2 plant specimens (gift).

MAGUIRE, DR. BASSETT, Logan, Utah: 14 specimens of algae (gift); 505 photographic prints (exchange).

MALDONADE, DR. ANGEL, Lima, Peru: 11 specimens of algae (gift).

MANN, LOUIS K., Chicago: 16 specimens of algae (gift).

MARSH, ERNEST G., JR., Victoria, Texas: 960 specimens of Mexican plants (gift).

MARTÍNEZ, PROFESSOR MAXIMINO, Mexico City, Mexico: 16 specimens of Mexican plants, 2 specimens of algae (gift).

MATUDA, EIZI, Escuintla, Chiapas, Mexico: 20 specimens of Mexican plants (gift).

MELBOURNE BOTANIC GARDENS, South Yarra, Australia: 40 specimens of Australian plants (exchange).

MEYER, PROFESSOR TEODORO, Tucumán, Argentina: 9 plant specimens (gift).

MILLAR, JOHN R., Chicago: 10 specimens of algae (gift).

MISSOURI BOTANICAL GARDEN, St. Louis, Missouri: 481 plant specimens (exchange).

MONTANA STATE UNIVERSITY, Herbarium, Missoula, Montana: 145 specimens of algae (exchange).

MOORE, GEORGE, Sullivan, Missouri: 25 specimens of Missouri plants (gift).

MUNZ, DR. P. A., Claremont, California: 41 specimens of South American plants (gift).

MUSEO NACIONAL, San José, Costa Rica: 189 specimens of Costa Rican plants (gift).

NEW MEXICO STATE COLLEGE, New Mexico: 2 economic specimens (gift).

NEW YORK BOTANICAL GARDEN, New York: 68 plant specimens, 242 cryptogamic specimens, 88 photographic prints (exchange).

OHIO STATE UNIVERSITY, Herbarium, Columbus, Ohio: 203 specimens of algae (exchange).

PACHECO H., MARIANO, Guatemala City, Guatemala: 4 plant specimens (gift).

PENLAND, PROFESSOR C. WILLIAM, Colorado Springs, Colorado: 41 specimens of plants from Ecuador (gift).

PETERSEN, OSCAR, St. Louis, Missouri: 10 plant specimens (gift).

POMONA COLLEGE, Claremont, California: 90 plant specimens (exchange).

PONCE, PROFESSOR JOSÉ M., Chapultepec, Mexico: 60 specimens of Mexican plants (gift).

PRESCOTT, DR. G. W., Albion, Michigan: 76 specimens of algae (gift).

PRINCIPIA, THE, Elsah, Illinois: 76 specimens of plants from New Mexico (gift).

RAGONESE, ARTURO E., Santa Fe, Argentina: 88 plant specimens from Argentina (gift).

REEVES, DR. R. G., College Station, Texas: 5 plant specimens (gift).

REHBEIN, MRS. C. C., Chicago, Illinois: 1 specimen of cultivated plant (gift).

REKO, DR. BLAS P., Tacubaya, Mexico: 14 plant specimens (gift).

RICHARDS, DONALD, Chicago: 140 specimens of plants from Indiana and Minnesota, 805 cryptogamic specimens (gift).

ROBERTS, MRS. ALICE S., Chicago: 214 plant specimens from Tennessee and Ohio (gift).

ROSENGURTT, PROFESSOR BERNARDO, Montevideo, Uruguay: 17 specimens of Uruguayan plants (gift).

SCHIPP, W. A., Darwin, Australia: 1 plant specimen (gift).

SCHNEIDER, RICHARD A., Kankakee, Illinois: 386 specimens of Illinois plants (exchange).

SCHULTES, RICHARD EVANS, Cambridge, Massachusetts: 1 plant specimen, 1 photographic print (gift).

SEAVERS, MISS DOTH, Bennington, Vermont: 67 specimens of plants from Barro Colorado Island (gift).

SERVICIO BOTÁNICO, Ministerio de Agricultura y Cría, Caracas, Venezuela: 279 wood specimens, 73 economic specimens (exchange).

SETCHELL, PROFESSOR WILLIAM A., Berkeley, California: 13 specimens of algae (gift).

SHERFF, DR. EARL E., Chicago: 217 plant specimens (gift).

STANDLEY, PAUL C., Chicago: 752 plant specimens (gift).

STANFORD UNIVERSITY, Dudley Herbarium, California: 261 specimens of Mexican plants (exchange).

STEYERMARK, MRS. CORA SHOOP, Chicago: 8 cryptogamic specimens (gift).

STEYERMARK, DR. JULIAN A., Chicago: 2,538 plant specimens, 6 cryptogamic specimens (gift).

STIFFLER, MRS. C. B., Chicago: 9 specimens of algae (gift).

STRICKLAND, J. C., Charlottesville, Virginia: 14 cryptogamic specimens (gift); 91 cryptogamic specimens (exchange).

TAFT, DR. CLARENCE E., Columbus, Ohio, and WILLIAM A. DAILY, Cincinnati, Ohio: 27 specimens of algae (gift).

TAYLOR, DR. WILLIAM R., Ann Arbor, Michigan: 101 specimens of algae (gift).

TRYON, R. M., JR., Cambridge, Massachusetts: 24 plant specimens (gift); 82 plant specimens (exchange).

UNITED STATES DEPARTMENT OF AGRICULTURE, National Arboretum, Washington, D.C.: 1,273 plant specimens (exchange).

UNITED STATES NATIONAL MUSEUM, Washington, D.C.: 551 plant specimens, 5 typed descriptions of new species of plants (exchange).

UNIVERSITY OF CALIFORNIA, Department of Botany, Berkeley, California: 2,200 specimens of plants from Peru and Bolivia (gift); 258 specimens of California plants (exchange).

UNIVERSITY OF CALIFORNIA AT LOS ANGELES, California: 12 plant specimens (exchange).

UNIVERSITY OF GEORGIA, Department of Botany, Athens, Georgia: 1 plant specimen (gift).

UNIVERSITY OF IDAHO, Department of Botany, Moscow, Idaho: 1 branch of Idaho white pine (gift).

UNIVERSITY OF IDAHO, Southern Branch, Department of Botany, Pocatello, Idaho: 34 specimens of Idaho plants (gift).

UNIVERSITY OF MICHIGAN, University Herbarium, Ann Arbor, Michigan: 230 plant specimens (exchange).

UNIVERSITY OF MINNESOTA, Department of Botany, Minneapolis, Minnesota: 50 specimens of Minnesota plants (exchange).

UNIVERSITY OF TEXAS, Department of Botany, Austin, Texas: 125 specimens of Mexican plants (gift).

UNIVERSITY OF THE PHILIPPINES, Manila, Philippine Islands: 252 specimens of algae (exchange).

UNIVERSITY OF WISCONSIN, Department of Botany, Madison, Wisconsin: 33 plant specimens (exchange).

VOGL, REV. PADRE C., Caracas, Venezuela: 484 specimens of plants from Venezuela (gift).

VOTH, DR. PAUL D., Chicago: 15 plant specimens, 13 cryptogamic specimens (gift); 50 cryptogamic specimens (exchange).

WALP, DR. LEE, Marietta, Ohio: 19 specimens of algae (gift).

WALPOLE, MRS. ROBERT H., Winnetka, Illinois: 1 plant specimen (gift).

WELCH, MISS HELEN H., Terre Haute, Indiana: 2 algal specimens (gift).

WELCH, DR. WINONA H., Greencastle, Indiana: 35 specimens of mosses (exchange).

WILLIS, MISS BARBARA, Bennington, Vermont: 42 specimens of mosses (gift).

WITTE MEMORIAL MUSEUM, San Antonio, Texas: 34 specimens of Texas plants (gift).

WOLLE, PHILIP W., Princess Anne, Maryland: 2 algal specimens (gift).

YALE UNIVERSITY, School of Forestry, New Haven, Connecticut: 14 plant specimens (gift).

YOUNG, MRS. RUSSELL, Chicago: 1 specimen of semipetrified wood (gift).

ZETEK, JAMES, Balboa, Canal Zone: 30 specimens of Panama plants (gift).

DEPARTMENT OF GEOLOGY—ACCESSIONS

AMERICAN MUSEUM OF NATURAL HISTORY, New York: casts of fossil vertebrates (exchange).

ARTAMONOFF, GEORGE, Chicago: 4 specimens of soils—Venezuela and Colombia (gift).

AUSTRALIAN MUSEUM, Sydney, New South Wales, Australia: fragment with crust of Barratta No. 8 meteorite—New South Wales (exchange).

BALESTERIA, A. A., Chicago: 1 specimen of chert with shrinkage cracks—north of Rockford, Illinois (gift).

BARBER, C. M., Hot Springs, Arkansas: 2 incomplete carapaces of fossil turtles—Devil's Backbone, Saratoga, Arkansas; plesiosaur vertebrae—Delight, Arkansas (gift).

BARKER, JAMES M., Honolulu, Hawaii: 24 specimens of volcanic sands—Hawaii and Oahu (gift).

BECKER, R. R., Gainesville, Florida: 18 groups of fish teeth, 1 echinoid—Gainesville, Florida (gift).

BLUM, CHARLES E., New York: 1 stylolite—Lannon, Wisconsin (gift).

BRADLEY, WORTHEN, San Francisco, California: 7 specimens of ore—various localities (gift).

BRADY, PROFESSOR L. F., Flagstaff, Arizona: 21 volcanic specimens—Arizona (gift).

BRYANT, W., Parlier, California: 16 teeth and 2 fragments of tusks of *Desmostylus*—Oregon; 1 specimen of rhodonite—Tulare County, California (gift).

BUDDHUE, JOHN D., Pasadena, California: 1 fragment of Darwin glass—Tasmania (exchange).

CARDIOS, MICHAEL, Chicago: 2 stylolites—near Bedford, Indiana (gift).

CARNEGIE MUSEUM, Pittsburgh, Pennsylvania: casts of 4 vertebrate fossils (exchange).

CROPAS, JULIUS, St. Johns, Arizona: 1 specimen of concretionary barite—St. Johns, Arizona (gift).

EUNSON, M. J., Murfreesboro, Arkansas: 5 specimens of cinnabar—Murfreesboro, Arkansas (gift).

FIELD, DR. HENRY, Chicago: 1 specimen of residual soil—Huntingdon, Pennsylvania; 4 specimens of sand—Florida and Georgia.

FIELD MUSEUM OF NATURAL HISTORY:

Collected by Colin C. Sanborn and Karl P. Schmidt (Field Museum Magellanic Expedition, 1889): 1 specimen of hematitic rock, and 1 specimen of limonitic rock—Lima, Peru.

Collected by Dr. Henry Field (Field Museum North Arabian Desert Expedition, 1928): 89 specimens of rocks—Iraq and Trans-Jordan.

Collected by Elmer S. Riggs (First Marshall Field Expedition to Argentina and Bolivia, 1922-24): part of collection of invertebrate fossils—Punta, Casamayor, Argentina.

Collected by Paul O. McGrew (Field Museum Paleontological Expedition to South Dakota, 1940): 4 specimens of vertebrate fossils—Nebraska and South Dakota.

Collected by Sharat K. Roy (Rawson-MacMillan-Field Museum Subarctic Expedition, 1927-28): 110 invertebrate fossils—Frobisher Bay, Baffin Land.

Purchases: 2 mineral specimens—Lehi, Utah; 23 specimens of meteorites—United States; individual of "Ozono" (Crockett County, Texas) meteorite.

GOODMAN, R. J., Chicago: 16 geological specimens—United States (gift).

GRETTON, R. N., Minneapolis, Minnesota: 1 specimen of chatoyant goethite-bearing quartz—Cayuna, Minnesota (gift).

GROESBECK, DR. M. J., Porterville, California: 17 geological specimens—Nevada and California (gift).

HERPERS, HENRY, Chicago: 16 specimens of rocks and minerals—various localities; 8 micro-slides of minerals—Pennsylvania (gift); 2 mineral specimens—Utah and California (exchange).

HUMMEL, ARNIM D., Richmond, Kentucky: part of skeleton of *Megalonyx*—London Mills, Illinois (gift).

JEANNISSON, MRS. L., Park Ridge, Illinois: 1 specimen of azurite and malachite—Arizona (gift).

JENKINS, MRS. CORA, Chicago: 16 barite roses—near Norman, Oklahoma (gift).

JENNINGS, JOHN W., Eureka Springs, Arkansas: 1 specimen of marcasite, 1 specimen of percussion cone on chert—Eureka Springs, Arkansas (gift).

JONES, WILLIAM, Lake City, Florida: 1 specimen of botryoidal hematite—locality unknown (gift).

KEMPFFER, KARL, Chicago: 1 specimen of specular hematite on hematite—Guernsey, Wyoming (gift).

KESTER, JOHN H., Easton, Maryland: 1 specimen of manganese ore—McCurtaintown County, Oklahoma (gift).

LA PAZ, PROFESSOR LINCOLN, Columbus, Ohio: 1 meteorite—Ector County, Texas (gift).

LOOK, ALFRED, Grand Junction, Colorado: upper jaw with dentition of *Barylambda faberi*—Grand Junction, Colorado (gift).

LOS ANGELES MUSEUM OF HISTORY, SCIENCE AND ART, Los Angeles, California: cast of skull and jaws of *Camelops evansi* (exchange).

MCGREW, PAUL O., Chicago: 8 specimens of precious opal—Department of Gracias, Honduras (gift).

MATHER, BRYANT, Chicago: 2 mineral specimens—California and Wyoming (gift).

MEAD, GRAYSON E., Chicago: jaw of *Cynarctos acridens*—Marshland, Nebraska (gift).

MELLINGER, J., Longmont, Colorado: 10 specimens of fossil mammals—near Gault, Colorado (gift).

MENZEL, WILLIAM E., Chicago: 1 specimen of onyx marble—Lower California, Mexico (gift).

MUSEO NACIONAL DE COSTA RICA, San José, Costa Rica: 18 minerals, 2 fossil teeth, 15 specimens of fossil wood, 6 specimens of fossil coral, and 154 invertebrate fossils—Costa Rica (gift).

MYERS, GEORGE T., Jamestown, Tennessee: 12 specimens of barite—Jamestown, Tennessee (gift).

NICHOLS, HENRY W., Chicago: 2 mica condensers (gift).

PALKOVICH, BASIL, East Chicago, Indiana: 1 tooth of cave bear—Hungary (gift).

PALMER, DR. R. H., Havana, Cuba: 18 fossil crinoids—Havana, Cuba (exchange).

PAPE, JOHN C., Mullan, Idaho: 6 specimens of lead-zinc-silver ore—Mullan, Idaho (gift).

PEABODY MUSEUM, New Haven, Connecticut: 6 casts of vertebrate fossils (exchange).

PEYTON, W. T., Morton, Wyoming: 1 septarium—near Morton, Wyoming (gift).

PITTS, WILLIAM B., Sunnyvale, California: 2 plaques of chialtolite—Massachusetts and Australia (gift).

PLANTZ, H. W., Chicago: 1 precious opal—Honduras(?) (gift).

QUINN, JAMES H., Chicago: 15 specimens of vertebrate fossils—Ainsworth, Nebraska (gift).

SALO, O. J., Red Lodge, Montana: 8 specimens of dahllite—Montana (gift).

SCHAAP, R., Batavia, Java, Netherlands East Indies: 6 tektites, 2 obsidian bombs—Java and Philippines (gift).

SCHMIDT, ROBERT, Homewood, Illinois: skull of fossil dog, *Daphaenus*—Bad Lands, South Dakota (gift).

SCHNEIDER, E. E., Chicago: 2 specimens of blue "opaline" quartz porphyry—near Babyhead Mountain, Texas (gift).

SHOLER, C. H., Minneapolis, Minnesota: 1 specimen of cross bedded sandstone—near Missoula, Montana (gift).

STANDARD OIL COMPANY (Indiana), Chicago: 2 photographs (gift).

SUNSHINE MINING COMPANY, Kellogg, Idaho: 1 specimen of silver ore—Kellogg, Idaho (gift).

THIESMAYER, PROFESSOR LINCOLN R., Appleton, Wisconsin: 6 dreikanter and ventifacts—Cape Cod, Massachusetts (gift).

TREATCH, W. M., Hennepin, Illinois: piece of copper boulder—Hennepin, Illinois (gift).

TREVETT, MISS ANN, Casper, Wyoming: 1 specimen of ferritungstite—Wyoming (gift).

UNITED STATES NATIONAL MUSEUM, Washington, D.C.: cast of skull of *Desmostylus hesperys* (exchange).

VON DRASEK, FRANK, Cicero, Illinois: 14 geological specimens—Murfreesboro, Arkansas (gift).

WINTERBOTHAM, JOHN R., III, Chicago: 2 fossil plants—Florissant, Colorado (gift).

WISE, FRANCIS, Colorado Springs, Colorado: 4 minerals—Durango, Mexico (gift).

WISE, VAUGHN, Logansport, Indiana: 1 specimen of granite xenolite in basalt—Logansport, Indiana (gift).

WORTH, F. C., Chicago: 28 specimens of ores and rocks—various localities (gift).

ZIEGLER, EDWARD, Chicago: 1 specimen of fossil spruce—near Adel, Iowa (gift).

DEPARTMENT OF ZOOLOGY—ACCESSIONS

ACADEMY OF NATURAL SCIENCES, Philadelphia, Pennsylvania: 7 bird skins—various localities (exchange).

ADAMS, WILLIAM J. R., Wayland, Kentucky: 48 salamanders, 15 toads—Kentucky (exchange).

ALLEN, DAVID, Highland Park, Illinois: 2 salamanders, 1 snapping turtle—La Porte County, Indiana (gift).

ALLEN, E. ROSS, Silver Springs, Florida: 1 panther skull—Collier County, Florida (gift).

ALLEN, PAUL H., Balboa, Canal Zone: 1 quetzal skin—Panama (gift).

ALWART, PAUL J., Chicago: 5 beetles—Chetek, Wisconsin (gift).

ANDREWS, E. WYLLYS, Cambridge, Massachusetts: 82 bats in alcohol, 7 rodent skins and skulls, 5 small mammal skulls, 2 salamanders, 197 frogs, 328 lizards, 431 snakes, 8 turtles, 66 fishes, 1 crab, 3 scorpions—Yucatan and Campeche, Mexico (gifts).

ANONYMOUS DONOR: 5,153 bird skins—various localities (gift).

ANONYMOUS DONOR: 68 fishes—various localities (gift).

ARIZONA GAME AND FISH COMMISSION, Phoenix, Arizona: 1 river salmon—California (gift).

ARMOUR AND COMPANY, Chicago: 2 domestic animals and parts of 2 others (gift).

ARNOLD, GUSTAV E., San Augustine, Texas: 9 lizards, 7 snakes, 1 turtle—Texas (gift).

ARTAMANOFF, GEORGE, Chicago: 1 land snail, 31 insects—Venezuela and Colombia (gift).

BARBER, CHARLES M., Hot Springs, Arkansas: 1 bat in alcohol, 1 lizard, 1 snake, 1 cleaned turtle skeleton—Arkansas and Brazil (gift).

BARTEL, KARL, Blue Island, Illinois: 1 western sandpiper—Wolf Lake, Indiana (gift).

BARTNICK, BERNARD, Chicago: 12 hummingbirds, 1 parrot—Venezuela and Colombia (gift); 31 bird skins—Europe and South America (exchange).

BASS BIOLOGICAL LABORATORY, Englewood, Florida: 2 shark jaws, 1 young ray and egg—Florida (gift).

BECKER, MRS. VIOLET, Wooddale, Illinois: 1 rattlesnake—Wooddale, Illinois (gift).

BEECHER, WILLIAM J., Chicago: 2 young rabbit skins and skulls—Fox Lake, Illinois (gift).

BEST, MISS ELIZABETH, Glencoe, Illinois: 1 beetle—Nashville, Indiana (gift).

BRITISH MUSEUM (NATURAL HISTORY), London, England: 88 bats in alcohol—West Indies, Trinidad, and Dutch Guiana (exchange).

BROMUND, E. FRED, Mount Pleasant, Michigan: 108 shells—various localities; 1 scorpion-fly—Michigan (gift).

BROWN, MRS. A. W., Spirit Lake, Iowa: 2 marine shells—Texas (gift).

BUCHSBAUM, DR. RALPH, Chicago: 2 lizards—Barro Colorado Island, Canal Zone (gift).

BUCK, FRANK, Chicago: 1 jaguar (gift).

BURTON, ROBERT A., Evanston, Illinois: 2 salamanders, 87 frogs, 47 toads, 24 snakes, 4 turtles—Mount Pleasant, Iowa (gift).

BURTON, ROBERT A. and DONALD KEMP, Evanston, Illinois: 1 tadpole, 13 frogs, 4 snakes, 2 turtles—Grundy County, Illinois (gift).

CAMPBELL, J. E., Graham, Texas: 1 hog moth—Graham, Texas (gift).

CASCARD, BEN, Gary, Indiana: 458 lower invertebrates—San Pedro, California (gift).

CHICAGO ZOOLOGICAL SOCIETY, Brookfield, Illinois: 89 mammals, 285 birds, 3 salamanders, 18 frogs, 3 lizards, 2 birds' eggs, 111 snakes, 3 turtles, 1 alligator, 1 tick, 1 peripatus—various localities (gift).

CONOVER, BOARDMAN, Chicago: 36 birds, 11 eggs—various localities (gift); 17 birds—various localities (exchange).

COWLES, DR. RAYMOND B., Los Angeles, California: 3 sand lizards—Arizona (gift).

DAGGY, THOMAS, Evanston, Illinois: 3 beetles—Laporte County, Indiana (gift).

DAMPF, DR. ALFONSO, Mexico City, Mexico: 7 bats in alcohol—Mexico and Guatemala (gift).

DAVIS, D. DWIGHT, Naperville, Illinois: 1 raccoon—Naperville, Illinois (gift).

DE CLEMENTS, FRANK, Chicago: 1 spider—Chicago (gift).

DEITMER, CARL, Chicago: 1 wasp—Chicago (gift).

DROPKIN, V. H. and I. ROSSMAN, Chicago: 1 bird—Chicago (gift).

DROUBET, DR. FRANCIS, Chicago: 2 slides of freshwater sponges (gift).

DUCKWORTH, N. H., Manila, Philippine Islands: 1 flying lizard—Lake Bulusan, Philippine Islands (gift).

DUNN, DR. E. R., Haverford, Pennsylvania: 2 coral snake heads—Puerto Armuelles, Panama (gift).

DYBAS, HENRY S., Chicago: 783 insects and allies—various localities (gift).

EFF, DONALD, Sylvania, Ohio: 1 butterfly—Wallace, Idaho (gift).

EMERSON, DR. ALFRED E., Chicago: 25 termites—British Honduras (gift).

ENZENBACHER, ANDREW, Chicago: 2 turtles, 3 snakes—Dunes, Indiana (gift).

FIELD, DR. HENRY, Chicago: 1 mammal, 11 salamanders, 11 tadpoles, 16 frogs, 11 toads, 3 lizards, 6 snakes, 29 turtles, 229 fishes, 815 insects and allies, 230 lower invertebrates—various localities in United States (gift).

FIELD MUSEUM OF NATURAL HISTORY:

Collected by Emmet R. Blake: 14 sets of birds' eggs—Illinois.

Collected by Rudyard Boulton and D. Dwight Davis (Leon Mandel Caribbean Expedition of Field Museum): 11 mammal skins, 28 bats in alcohol, 97 bird skins, 62 bird skeletons, 7 sets of birds' eggs, 9 frogs, 329 lizards, 81 snakes, 7 turtles, 2 crocodilians, 118 fishes, 68 insects and allies, 227 lower invertebrates—Caribbean region, Yucatan, and Honduras.

Collected by Sidney Camras: 230 bird lice—various localities.

Collected by D. Dwight Davis (Leon Mandel Caribbean Expedition of Field Museum): 329 lizards, 81 snakes, 2 crocodilians, 7 turtles, 9 frogs—Caribbean region.

Collected by Dr. Henry Field and Richard A. Martin (Field Museum Anthropological Expedition to the Near East, 1934): 5 ticks—Iraq and Syria.

Collected by Juan Heider (Marshall Field Brazilian Expedition): 2 scorpions—Monte Carlo, Argentina.

Collected by Dr. Wilfred H. Osgood, Colin C. Sanborn, Karl P. Schmidt, and John M. Schmidt (Field Museum Magellanic Expedition): 840 small mammal skins and skulls, 59 small mammals in alcohol, 7 large mammal skins, 23 mammal skeletons, 14 sepa-

rate mammal skulls, 182 birds, 16 bird skeletons, 152 tadpoles, 3 lots of toad eggs, 1,002 frogs and toads, 454 lizards, 82 snakes, one turtle skull, 278 fishes, 977 insects and allies, 347 lower invertebrates—Colombia, Peru, Chile, Argentina, and Tierra del Fuego.

Collected by Martin Ribnikar: 3 birds—Chicago area.

Collected by Paul C. Standley (Sewell Avery Expedition to Guatemala, 1938–39): 5 fresh-water shells—Escoba, Guatemala.

Collected by Dr. Julian A. Steyermark (Field Museum Botanical Expedition to Guatemala, 1939–40): 2 bats and 1 mouse in alcohol, 26 frogs, 11 lizards, 4 snakes, 14 fishes, 4 insects and allies, 3 crabs, 16 shells—Guatemala.

Third Asiatic Expedition (1926) (American Museum of Natural History): 2 bat skulls—China.

Collected by Edward C. Tobiasz: 3 frogs, 5 snakes, 7 hair-worms—Du Page County, Illinois.

Transferred from Department of Geology: 1 elephant skeleton.

Transferred from Department of N. W. Harris Public School Extension: 4 birds—Illinois and Wisconsin (exchange).

Collected by Rupert L. Wenzel: 50 biting-lice—San Diego County, California; 1,149 external bat parasites—various localities.

Collected by Loren P. Woods (Field Museum Expedition to Southeastern Missouri): 5,385 fishes—southeastern Missouri.

Purchases: 3 tadpoles, 7 frogs, 4 lizards, 5 snakes—Africa and South America; 35 small mammal skins and skulls, 183 snakes—Bolivia; 98 mammals—Brazil; 10 bat skins and skulls—California; 13 mammal skins and skulls, 16 small mammals in alcohol—Chile; 6 bat skins and skulls, 16 bats in alcohol—Colombia; 13 birds—East Africa; 1 lizard, 6 snakes, 5 fishes, 132 insects, 15 crabs—Florida; 44 mammal skins and skulls, 1 mammal skull, 16 bats in alcohol, 363 birds, 59 salamanders, 85 frogs, 562 lizards, 130 snakes, 1 turtle, 37 fishes—Mexico; 26 mammal skins and skulls, 1 mammal skeleton—Nebraska and South Dakota; 308 insects and allies—New Guinea; 25 small mammal skins and skulls—North Manchuria; 36 mammal skins and skulls—Oregon; 6 small mammal

skins and skulls—Peru; 26 birds—Utila Island; 84 hawks and owls, 1 other bird skin—various localities (Leslie Wheeler Fund); 7 mammals—Vermont; 2 caecilians, 8 frogs, 10 lizards, 5 snakes—West Indies and South America.

FOGLE, DR. F. LESTER, South Bend, Indiana: 2 bats in alcohol, 1 centipede—West Africa (gift).

FRANZ, HERMAN, Bensenville, Illinois: 2 snakes—McHenry, Illinois (gift).

FRANZEN, ALBERT J., Chicago: 1 snake—Calumet Lake, Illinois (gift).

FRIESSER, JAMES, Chicago: 1 newt—Ashland County, Wisconsin (gift).

FRIESSER, JULIUS, Chicago: 1 jaguar skull—Brazil; 1 fish specimen—Illinois (gift); 1 white rhino skull—Africa; 1 pair deer antlers—Asia (exchange).

FRIZZELL, MRS. DON L., Negritos, Peru: 4 snakes—Peru (gift).

FUNK, T. L., Chicago: 1 beetle—Louisville, Kentucky (gift).

GENERAL BIOLOGICAL SUPPLY HOUSE, Chicago: 1 injected frog—Chicago area; 6 small bivalve shells—Englewood, Florida (gift).

GERHARD, WILLIAM J., Chicago: 23 insects—New Jersey and Colorado.

GRANT, GORDON, Los Angeles, California: 1,137 insects and allies, 436 lower invertebrates—Los Angeles, California (gift).

GREEN, J. A., Chicago: 1 loggerhead turtle skull—Key West, Florida (gift).

GREEN, DR. N. BAYARD, Huntington, West Virginia: 12 salamanders—Huntington, West Virginia (exchange).

GRONEMANN, CARL F., Elgin, Illinois: 6 beetles—Province of Hanover, Germany (gift).

GUERET, EDMOND N., Chicago: 2 birds; 3 freshwater clams—Barron County, Wisconsin (gift).

GUILLAUME, ROBERT, Chicago: 1 snake—Deerfield, Illinois (gift).

HAAS, DR. FRITZ, Chicago: 18 freshwater shells—Chicago (gift).

HAAS, DR. GEORG, Jerusalem, Palestine: 1 salamander, 1 frog, 15 lizards, 4 snakes—Palestine (exchange).

HARGROVE, J., Chicago: 6 book-lice—Chicago (gift).

HERPERS, HENRY, Chicago: 2 land shells—Ogdensburg, New Jersey (gift).

HERTIG, BRUCE, Lima, Peru: 1 toad, 1 blind snake—Lima, Peru (gift).

HERTIG, DR. MARSHALL, Lima, Peru: 1 snake—Surco, Peru (gift).

HIBLER, C. D., Kingsville, Texas: 15 frogs and toads, 9 lizards, 19 snakes, 7 turtles—Kingsville, Texas (exchange).

HILL, J. L., Berwyn, Illinois: 2 insects—Colorado and South Dakota (gift).

HOBGOOD, DR. W. C., Monticello, Arkansas: 1 short-tailed shrew in alcohol, 1 salamander, 8 frogs, 3 lizards, 8 snakes, 1 turtle—Monticello, Arkansas (gift).

HODGSDON, DONALD, Pochuta, Guatemala: 1 tarantula—Pochuta, Guatemala (gift).

HOLABIRD, JOHN A., Chicago: 1 raccoon skin and skeleton, 2 woodrat skins and skulls, 2 young woodrats in formalin, 20 bird skins, 6 bird skeletons, 28 frogs, 15 lizards, 20 snakes, 2 turtles, 1 alligator, 204 fishes—Avery Island, Louisiana (gift).

HOLABIRD, MRS. JOHN A., Chicago: 1 hummingbird—Illinois (gift).

HOLLEY, FRANCIS E., Lombard, Illinois: 8 insects—various localities (gift).

HOOGSTRAAL, HARRY, Champaign, Illinois: 28 small mammal skins and skulls, 16 bats in alcohol, 8 separate mammal skulls—Mexico (gift).

HUBRIGHT, LESLIE, St. Louis, Missouri: 10 small marine shells—Port St. Joe, Florida (gift).

IGLER, MISS SOPHIE, and MISS EDITH HAAS, Chicago: 10 freshwater mussels—Loon Lake, Illinois (gift).

IOWA WESLEYAN COLLEGE, Mount Pleasant, Iowa: 1 snake—Mount Pleasant, Iowa (gift).

JANECEK, JOHN J., Cicero, Illinois: 55 insects, 2 spiders—Illinois (gift).

JEWETT, STANLEY G., Portland, Oregon: 2 rabbit skins and skulls—Oregon (gift).

JOERN, MISS MARIE, River Forest, Illinois: 3 ticks—River Forest, Illinois (gift).

KEMP, DONALD, Evanston, Illinois: 21 salamanders, 74 tadpoles, 41 frogs, 5 lizards, 15 snakes, 8 turtles, 7 snails—Illinois and Missouri (gift).

KNICKERBOCKER, C. K., ESTATE OF, Chicago: 223 birds—North America; 9,869 birds' eggs—various localities (gift).

KNOWLTON, PROFESSOR G. F., Logan, Utah: 60 flies—Utah (exchange).

KRAFT, EVERETT E., Chicago: 2 beetles—Chicago (gift).

KURFESS, JOHN F., Hinsdale, Illinois: 1 melanistic young garter snake—Hinsdale (gift).

LAKE, WILLIAM, Chicago: 1 bat in alcohol—Chicago (gift).

LAMB, ROBERT A., Hammond, Indiana: 1 walking stick—Hammond, Indiana (gift).

LAMBERT, RONALD, Zion, Illinois: 1 freshwater shell (gift).

LAMBERT, DR. S. M., Utica, New York: 1 crocodile skull—New Guinea (gift).

LERNER, MICHAEL, New York: 1 black marlin, 1 thresher shark—New Zealand (gift).

LETL, FRANK, Homewood, Illinois: 1 bird, 1 water snake—Illinois (gift).

LEVY, SEYMOUR, Chicago: 1 bird—Chicago (gift).

LILJEBLAD, EMIL, Willow Park, Illinois: 43 insects—Pentwater, Michigan (gift).

LINCOLN PARK ZOO, Chicago: 3 mammals, 1 frog, 5 lizards, 11 snakes, 1 turtle, 1 young crocodile, 2 tongue worms (gift).

LOEWEN, MRS. S. L., Sterling, Kansas: 1 Great Plains lizard—Kansas (gift).

LUTZ, THOMAS, Downers Grove, Illinois: 1 insect—Aurora (gift).

MCCLOUD AND COMPANY, W. B., Chicago: 1 beetle—Chicago (gift).

MCLENNY, EDWARD A., Avery Island, Louisiana: 1 mammal skin and skull, 1 mammal skin and skeleton, 1 shrew in formalin, 1 three-legged mallard duckling in formalin—Avery Island (gift).

MARK, HARRIETT, Chicago: 1 bird—Chicago (gift).

MAZUR, ANTHONY, Chicago: 1 spider—Oswego, Illinois (gift).

MOCK, DR. HARRY, Evanston, Illinois: 1 mountain lion skeleton—New Mexico (gift).

MORAN, MORTON, San Diego, California: 76 insects—Phoenix, Arizona; 6 fishes, 256 insects and allies, 1,200 lower invertebrates—Coronado and San Diego, California (gift).

MORRISON, CLIFTON B., Chicago: 1 bird—Chicago (gift).

MUSEO NACIONAL DE COSTA RICA, San José, Costa Rica: 4 corals—Costa Rica (gift).

MUSEUM OF COMPARATIVE ZOOLOGY, Cambridge, Massachusetts: 1 solenodon skin and skeleton—San Domingo; 1 bat in alcohol—Java; 1 caecilian, 7 frogs, 30 lizards, 12 snakes, 2 turtles—various localities (exchange); 52 lizards—British West Indies (gift).

NELSON, BERNE, Wooddale, Illinois: 2 snakes—Wooddale, Illinois (gift).

NEUMAN, HERBERT, Elgin, Illinois: 1 fire-fly larva—Elgin, Illinois (gift).

OSGOOD, DR. WILFRED H., Chicago: 1 prairie dog skin and skull, 3 night hawks, 3 birds' eggs—Colorado; 1 tick—Mississippi (gift).

OWENS, DAVID W., Flossmoor, Illinois: 18 frogs, 7 snakes, 1 turtle—Illinois (gift).

PAQUETTE, DONALD J., Manteno, Illinois: 1 insect—Manteno, Illinois (gift).

PARK, ANDREW R., Evanston, Illinois: 2 moths—Urbana, Illinois (gift).

PATTERSON, BRYAN, Chicago: 108 insects and allies, 1 land shell—Indiana and Nebraska (gift).

PEARSALL, GORDON, Maywood, Illinois: 1 screech owl—River Forest, Illinois (gift).

PERSKY, MRS. B., Chicago: 2 marine shells—Miami Beach, Florida (gift).

PFLUEGER, AL, Miami, Florida: 2 ducks—Florida (gift).

PHILEY, HAROLD ST. JOHN, Jidda, Arabia: 3 arachnids—Arabia (gift).

PILSBRY, DR. HENRY A., Philadelphia, Pennsylvania: 3 paratypes of land shells—Miranda, Cuba (gift).

POHRTE, WILLIAM C., Laporte, Indiana: 8 salamanders, 2 tree frogs, 1 snake—Laporte County, Indiana (gift).

POLLAK, MRS. H. H., Chicago: 3 marine shells—Rio de Janeiro, Brazil (gift).

POPE, CLIFFORD H., Winnetka, Illinois: 1 injected turtle—Chicago area (gift).

POPOV, MISS SUSAN R., Freeport, Illinois: 1 crab spider—Freeport, Illinois (gift).

POULTER, DR. THOMAS, Chicago: 2 penguin skeletons—Little America (gift).

QUINN, JAMES H., Harvey, Illinois: 1 soft-shelled turtle—Ainsworth, Nebraska (gift).

REED, CARLOS S., Santiago, Chile: 5 fly-catchers—Chile (gift).

REED, FRANK, Monticello, Arkansas: 1 shrew skin and skull—Monticello, Arkansas (gift).

RETONDO, JOHN, Chicago: 101 insects—Chicago area (gift).

RIBNIKER, MARTIN, Chicago: 2 birds—Hinsdale, Illinois (gift).

RICKARDS, A. R. M., Bagdad, Arabia: 2 ticks—Aden, Arabia (gift).

ROMANA, WILLIAM, Chicago: 1 frog, 1 snake—Ludington, Michigan (gift).

ROSENBERG, W. F. H., Middlesex, England: 1 albatross—New Zealand (exchange).

ROYAL ONTARIO MUSEUM OF ZOOLOGY, Toronto, Ontario: 1 cleaned marten skeleton, 1 fisher skeleton—Ontario (exchange).

RUECKERT, ARTHUR, Chicago: 1 Cooper's hawk—Florida (gift).

SANBORN, COLIN C., Highland Park, Illinois: 1 beetle, 1 crayfish—Highland Park, Illinois (gift).

SANIBEL SCHOOL, Sanibel, Florida: 1 coach whip snake—Sanibel Island, Florida (gift).

SCHMIDT, JOHN M., Homewood, Illinois: 16 lizards, 6 snakes, 6 insects and allies—various localities (gift).

SCHMIDT, KARL P., Homewood, Illinois: 3 snakes, 3 lizards, 20 beetles—Illinois, Nebraska and Florida (gift).

SCHREIBER, JACK, Chicago: 1 tick—Michigan; 1 bird parasite—Chicago (gift).

SEEVERS, DR. CHARLES H., Chicago: 52 insects and allies—various localities (gift).

SEGOVIA, PASTORA, Rio Anzu, Ecuador: 28 beetles—Ecuador (gift).

SHEDD AQUARIUM, JOHN G., Chicago: 1 tropical fish—Amazon region (gift).

SHOEMAKER, DR. HURST, Urbana, Illinois: 19 insects—various localities (gift).

SHUEMAN, MARTIN, Bensenville, Illinois: 2 snakes—Wooddale, Illinois (gift).

SIGISMUND OF PRUSSIA, PRINCESS, Barranca, Costa Rica: 1 bat in alcohol, 3 frogs, 2 snakes, 1 boa head, 1 lizard, 23 insects and allies, 7 land shells—Barranca, Costa Rica (gift).

SLATER, DR. J. R., Tacoma, Washington: 7 snakes—Tacoma, Washington (gift).

SMITH, DR. C. S., San Marcos, Texas: 1 lizard, 1 snake—Texas (gift).

SMITH, DON, Chicago: 3 butterflies—Badger Mountains, Washington (gift).

SMITH, MRS. H. D., Lake Forest, Illinois: 1 snake—Desplaines River, Illinois (gift).

SORENSEN, HARVEY, Waukegan, Illinois: 1 pseudo-scorpion—Waukegan, Illinois (gift).

STEYERMARK, DR. JULIAN A., Chicago: 1 painted turtle—Lake County, Illinois (gift).

STOREY, MISS MARGARET, Stanford University, California: 51 fishes—Florida (gift).

TEXAS CO-OPERATIVE WILD LIFE RESEARCH UNIT, College Station, Texas: 1 spotted skunk skeleton—Colorado County, Texas (gift).

TOBIASZ, EDWARD C., Chicago: 1 salamander, 2 toads, 5 frogs, 5 snakes, 40 lower invertebrates—DuPage County, Illinois (gift).

TODD, JOSEPH D., Chicago: 124 marine shells—Anna Maria Key, Florida (gift).

TRAYLOR, MELVIN A., JR., Chicago: 781 bird skins, 1 bird skeleton—Yucatan and Campeche, Mexico (gift).

UNITED STATES NATIONAL MUSEUM, Washington, D.C.: 1 bat in alcohol—Celebes; 15 samples of shark skins, 3 crustaceans—various localities (exchange).

UNIVERSITY OF CALIFORNIA MUSEUM OF VERTEBRATE ZOOLOGY, Berkeley, California: 1 snake—Arabia (exchange).

UNIVERSITY OF MAINE, Orono, Maine: 2 land-locked salmon—Maine (gift).

UNIVERSITY OF MICHIGAN, MUSEUM OF ZOOLOGY, Ann Arbor, Michigan: 2 rabbits—Ecuador (exchange).

VATTER, ALBERT, Glenview, Illinois: 1 cicada—Glenview, Illinois (gift).

VIOSCA, DR. PERCY, New Orleans, Louisiana: 1 salamander—Louisiana (gift).

VOGL, PADRE CORNELIO, Caracas, Venezuela: 11 frogs, 1 lizard, 6 fishes, 686 insects and allies—Venezuela (gift).

VOGT, WILLIAM, Lima, Peru: 1 tern head in alcohol, 50 mollusks—Peru (gift).

VON IHERING, RUDOLPH, Recife, Brazil: 5 birds—Brazil (gift).

WADE, MISS ELIZABETH, Thomasville, Georgia: 6 salamanders—Thomasville, Georgia (gift).

WADE, FARLEY H., Park Ridge, Illinois: 1 wasp—Chicago (gift).

WALTON, MISS CLARA, Highland Park, Illinois: 1 bird—eastern North America; 10 birds—Highland Park, Illinois (gift).

WEED, ALFRED C., Chicago: 34 freshwater snails—Lake Ontario, New York (gift).

WELLS, JOSEPH M., Chicago: 657 birds' eggs—North America (gift).

WENZEL, RUPERT L., Chicago: 10 salamanders, 406 insects and allies, 5 slugs—various localities (gift).

WHITE, MISS BECKY, Thomasville, Georgia: 30 insects—Trinidad, British West Indies (gift).

WHITE, MRS. ROBB, Thomasville, Georgia: 1 mole in alcohol, 1 lizard, 9 snakes, 2 turtles, 46 insects—Florida and Georgia; 62 insects—Kentucky (gift).

WHITE, MRS. ROBB, JR., Thomasville, Georgia: 3 salamanders, 1 siren, 8 frogs, 6 snakes—Thomasville, Georgia (gift).

WOLCOTT, ALBERT B., Downers Grove, Illinois: 1 salamander—Downers Grove, Illinois; 24 beetles—various localities (gift).

WONDER, FRANK, Chicago: 1 weasel—Butternut, Wisconsin (gift).

WOOD, GENERAL R. E., Chicago: 3 bear skulls—Alaska (gift).

WOODCOCK, H. E., Chicago: 7 butterflies—New Mexico; 1 spider—Chicago (gift).

WOODS, LOREN P., Chicago: 2 salamanders, 6 frogs, 1 lizard, 5 snakes, 3 crayfish—various localities (gift).

WYATT, ALEX K., Chicago: 11 insects—various localities (gift).

RAYMOND FOUNDATION—ACCESSIONS

FIELD MUSEUM OF NATURAL HISTORY:
Made by Division of Photography: 629 slides, 16 prints Mandel-Caribbean Expedition, 67 colored slides.

Purchase: 1 slide projector, 1 phonograph, 5 phonograph record albums,

1 slide viewer, 60 slides in colors.

NATIONAL BROADCASTING COMPANY:
45 records of 15 "How Do You Know?" radio programs (gift).

WOOD, MIRIAM, Chicago: 10 colored slides (gift).

DIVISION OF PHOTOGRAPHY—ACCESSIONS

FISHER, MRS. ANNE, ESTATE OF, New York: 1,404 negatives, 3,022 prints, 75 enlargements, and 85 post card views of racial types and general scenes in Iraq (gift).

FIELD MUSEUM OF NATURAL HISTORY:
Made by Division of Photography: 6,848 prints, 1,897 negatives, 1,155 lantern slides, 612 enlargements, 42

large transparencies, 62 transparent labels.

Developed for expeditions: 144 negatives.

Made by Paul O. McGrew: 150 negatives (35 mm.) of general views and landscapes on the Pine Ridge Indian Reservation, South Dakota.

LIBRARY—ACCESSIONS

List of Donors of Books

INSTITUTIONS

Agencia Geral das Colonias Lisbon, Portugal.

El Agricultor Venezolano, Caracas, Venezuela.

Aluminum Company of America, Pittsburgh, Pennsylvania.

American Institute of the City of New York.

American Museum of Natural History, New York.

American Society for Testing Materials, Philadelphia, Pennsylvania.

American Society of Legion of Honor, New York.

Amerind Foundation, Dragoon, Arizona.

Anti-Cruelty Society, Chicago.

Art Institute of Chicago.

Atchison, Topeka and Santa Fé Railway Company, Topeka, Kansas.

Boonton Molding Company, Boonton, New Jersey.

- Brazil, Ministerio da Agricultura, Rio de Janeiro, Brazil.
- Carnegie Institution, Washington, D.C.
- Carolina Biological Supply Company, Elon College, North Carolina.
- Colombia, Ministerio de la Economia Nacional, Bogotá, Colombia.
- Compañía Argentina de Editores, Buenos Aires, Argentina.
- Cook County Forest Preserve District, Chicago.
- Dodd Mead and Company, New York.
- Federal Security Agency, Washington, D.C.
- Food Facts*, Chicago.
- General Society of Mechanics and Tradesmen, New York.
- Golden Gate Exposition, San Francisco, California.
- Guatemala, Instituto Químico-Agrícola Nacional, Guatemala City, Guatemala.
- Holst Publishing Company, Boone, Iowa.
- Illinois Coal Strippers Association, Chicago.
- Instituto de La Salle, Bogotá, Colombia.
- John Crerar Library, Chicago.
- Kaffrarian Museum, King William's Town, South Africa.
- Lincoln Golden Key Club, Chicago.
- Manchukuo, Central National Museum of, Hsinking, Manchukuo.
- Marine Studio, St. Augustine, Florida.
- Mexico, Departamento de la Marina Nacional, Pátzcuaro, Mexico.
- Monsanto Chemical Company, St. Louis, Missouri.
- National Association of Manufacturers, New York.
- National Soap Sculpture*, New York.
- Naturaliste Canadien*, Quebec, Canada.
- New York University, Institute of Fine Arts, New York.
- Northeastern University, Boston, Massachusetts.
- Queen Victoria Museum and Art Gallery, Tasmania, Australia.
- São Paulo, Departamento de Botânica, São Paulo, Brazil.
- School of African Studies, Cape Town, South Africa.
- Schools of American Research, Santa Fe, New Mexico.
- Semana de la Farmacia, La, San José, Costa Rica.
- Sondley Reference Library, Asheville, North Carolina.
- South Dakota University, Vermillion, South Dakota.
- Squibb and Sons, E. R., New York.
- Standard Oil Company, New York.
- Statsbiblioteket, Aarhus, Denmark.
- Toledo Museum of Art, Toledo, Ohio.
- Toledo Naturalists' Association, Toledo, Ohio.
- United Brewers Industrial Foundation, New York.
- Utah Agricultural Experiment Station, Logan, Utah.
- Washington, State Fisheries Department, Washington.
- Wood Technic*, Chicago.
- Work Projects Administration; Illinois Historical Records Survey Project, Urbana, Illinois.
- Yikal Maya Than*, Mérida, Yucatan.

INDIVIDUALS

- Aden, Alonzo J., Chicago.
- Aoe, Kojiro Mikage, Hyogoken, Japan.
- Baird, Don O., Huntsville, Texas.
- Beecher, William J., Chicago.
- Behn, Dr. Konrad, Valparaiso, Chile.
- Bernstorff, Dr. W. H., Calumet City, Illinois.
- Bolton, Mrs. Chester C., Cleveland, Ohio.
- Borenstein, S., Chicago.
- Bowen, Norman L., Chicago.
- Brimley, H. H., Raleigh, North Carolina.
- Causton, Dr. Gordon, Durban, Natal, Africa.
- Coleman, Edith, Blackburn, Victoria, Australia.
- Cory, Charles B., Jr., Chicago.
- Cummins, George B., Lafayette, Indiana.

- Daniel, H., Medellin, Colombia.
 Davis, D. Dwight, Chicago.
 Day, John and Company, New York.
 Emerson, Dr. Alfred E., Chicago.
 Farley, Malcolm, Chicago.
 Fehér, Dr. D., Sopron, Hungary.
 Fernandez de Cordoba, Joaquín, Morelia, Mexico.
 Field, Dr. Henry, Chicago.
 Field, Stanley, Lake Forest, Illinois.
 Francesco, Festa, Bitritto, Italy.
 Francis, W. D., Brisbane, Australia.
 Gerhard, W. J., Chicago.
 Gleason, H. A., New York.
 Graham, H. L., Dallas, Texas.
 Gregg, Clifford C., Flossmoor, Illinois.
 Grisecke, Dr. Albert A., Miraflores, Peru.
 Grove, Bert E., Chicago.
 Gunsaulus, Helen C., Chicago.
 Gusinde, Martin, St. Gabriel, Modling, Germany.
 Haas, Dr. Fritz, Chicago.
 Hambly, Dr. Wilfrid D., Chicago.
 Hamlin, Chauncey J., Buffalo, New York.
 Hansen, John Conrad, Chicago.
 Henderson, M. R., Singapore, Straits Settlements.
 Herald, Earl Stannard, Stanford University, California.
 Herman, Dr. Carlton M., San Diego, California.
 Hermanson, Helen, Chicago.
 Herpers, Henry, Chicago.
 Herrera, F. L., Lima, Peru.
 Heyser, Frank, Chicago.
 Hoehne, F. C., São Paulo, Brazil.
 Hovanitz, William, Pasadena, California.
 Hungerford, H. B., Lawrence, Kansas.
 Jeffreys, M. D. W., Port Harcourt, Nigeria.
 Jellison, William L., Hamilton, Montana.
 Johnston, Dr. John R., Chimaltenango, Guatemala.
 Just, Dr. T., Notre Dame, Indiana.
 Kelso, Leon, Washington, D.C.
 Kinghorn, J. R., Sydney, Australia.
 Knickerbocker, Kenneth, Chicago.
 Knoche, Dr. Walter, Buenos Aires, Argentina.
 Lagarrigue, Luis, Santiago, Chile.
 Lagler, Dr. Karl F., Ann Arbor, Michigan.
 Lasker, Bruno, New York.
 Latcham, Ricardo E., Santiago, Chile.
 Lewis, Dr. Albert B., Chicago.
 Liljeblad, Emil, Villa Park, Illinois.
 Little, James M., San Francisco, California.
 Lundell, C. L., Ann Arbor, Michigan.
 McGrew, Paul O., Chicago.
 McNair, James B., Los Angeles, California.
 Mather, Bryant, Chicago.
 Martin, Dr. Paul S., Chicago.
 Mayaud, Noel, Nantes, France.
 Mazzotti, Dr. Luis, Mexico City, Mexico.
 Mead, Dr. Margaret, New York.
 Moldenke, Harold N., New York.
 Nichols, Henry W., Chicago.
 Osgood, Dr. Wilfred H., Chicago.
 Pabst, Marie, Chicago.
 Pachecho Cruz, Santiago, Merida, Yucatan.
 Parr, A. E., New Haven, Connecticut.
 Patterson, Bryan, Chicago.
 Pearsall, Gordon, Maywood, Illinois.
 Pope, Clifford H., Chicago.
 Reynolds, Philip K., New York.
 Riggs, Elmer S., Chicago.
 Rosenberg, W. F. H., Edgeware, Middlesex, England.
 Ruiz Leal, A., Mendoza, Argentina.
 Sanborn, Colin Campbell, Chicago.
 Sanderson, Ivan T., London, England.
 Schmidt, Karl P., Chicago.
 Sherff, Dr. E. E., Chicago.
 Standley, Paul C., Chicago.
 Staner, P., Brussels, Belgium.
 Stauffer, Clinton R., Minneapolis, Minnesota.
 Stearn, William T., London, England.
 Steyermark, Dr. Julian A., Chicago.
 Stirton, Ruben Arthur, Berkeley, California.

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| Tapman, Lillian Smith, Jacksonville
Beach, Florida. | Wilbur, C. Martin, Chicago. |
| Thomson, S. C., Chicago. | Wise, Jennings C., Charlottesville,
Virginia. |
| Vargas, Dr. Luis, Mexico City, Mexico. | Woods, Loren P., Chicago. |
| Vetlesen, Mrs. Georg, New York. | Wyatt, Alex K., Chicago. |
| Walker, Dr. James W., Chicago. | Zamenhof, Dr. Stephen, New York. |
| Wasson, Theron, Chicago. | Zingg, Professor Robert M., Denver,
Colorado. |
| Wenzel, Rupert L., Chicago. | |

ARTICLES OF INCORPORATION

STATE OF ILLINOIS

DEPARTMENT OF STATE

WILLIAM H. HINRICHSEN, *Secretary of State*

TO ALL TO WHOM THESE PRESENTS SHALL COME, GREETING:

Whereas, a Certificate duly signed and acknowledged having been filed in the office of the Secretary of State, on the 16th day of September, A.D. 1893, for the organization of the COLUMBIAN MUSEUM OF CHICAGO, under and in accordance with the provisions of "An Act Concerning Corporations," approved April 18, 1872, and in force July 1, 1872, and all acts amendatory thereof, a copy of which certificate is hereto attached.

Now, therefore, I, William H. Hinrichsen, Secretary of State of the State of Illinois, by virtue of the powers and duties vested in me by law, do hereby certify that the said COLUMBIAN MUSEUM OF CHICAGO is a legally organized Corporation under the laws of this State.

In Testimony Whereof, I hereto set my hand and cause to be affixed the Great Seal of State. Done at the City of Springfield, this 16th day of September, in the year of our Lord one thousand eight hundred and ninety-three, and of the Independence of the United States the one hundred and eighteenth.

W. H. HINRICHSEN,
Secretary of State.

[SEAL]

TO HON. WILLIAM H. HINRICHSEN,

SECRETARY OF STATE:

SIR:

We, the undersigned citizens of the United States, propose to form a corporation under an act of the General Assembly of the State of Illinois, entitled "An Act Concerning Corporations," approved April 18, 1872, and all acts amendatory thereof; and that for the purposes of such organization we hereby state as follows, to-wit:

1. The name of such corporation is the "COLUMBIAN MUSEUM OF CHICAGO."

2. The object for which it is formed is for the accumulation and dissemination of knowledge, and the preservation and exhibition of objects illustrating Art, Archaeology, Science and History.

3. The management of the aforesaid museum shall be vested in a Board of FIFTEEN (15) TRUSTEES, five of whom are to be elected every year.

4. The following named persons are hereby selected as the Trustees for the first year of its corporate existence:

Edward E. Ayer, Charles B. Farwell, George E. Adams, George R. Davis, Charles L. Hutchinson, Daniel H. Burnham, John A. Roche, M. C. Bullock, Emil G. Hirsch, James W. Ellsworth, Allison V. Armour, O. F. Aldis, Edwin Walker, John C. Black and Frank W. Gunsaulus.

5. The location of the Museum is in the City of Chicago, County of Cook, and State of Illinois.

(Signed)

George E. Adams, C. B. Farwell, Sidney C. Eastman, F. W. Putnam, Robert McCurdy, Andrew Peterson, L. J. Gage, Charles L. Hutchinson, Ebenezer Buckingham, Andrew McNally, Edward E. Ayer, John M. Clark, Herman H. Kohlsaat, George Schneider, Henry H. Getty, William R. Harper, Franklin H. Head, E. G. Keith, J. Irving Pearce, Azel F. Hatch, Henry Wade Rogers,

Thomas B. Bryan, L. Z. Leiter, A. C. Bartlett, A. A. Sprague, A. C. McClurg, James W. Scott, Geo. F. Bissell, John R. Walsh, Chas. Fitzsimmons, John A. Roche, E. B. McCagg, Owen F. Aldis, Ferdinand W. Peck, James H. Dole, Joseph Stockton, Edward B. Butler, John McConnell, R. A. Waller, H. C. Chatfield-Taylor, A. Crawford, Wm. Sooy Smith, P. S. Peterson, John C. Black, Jno. J. Mitchell, C. F. Gunther, George R. Davis, Stephen A. Forbes, Robert W. Patterson, Jr., M. C. Bullock, Edwin Walker, George M. Pullman, William E. Curtis, James W. Ellsworth, William E. Hale, Wm. T. Baker, Martin A. Ryerson, Huntington W. Jackson, N. B. Ream, Norman Williams, Melville E. Stone, Bryan Lathrop, Eliphalet W. Blatchford, Philip D. Armour.

STATE OF ILLINOIS }
 } ss.
 COOK COUNTY }

I, G. R. MITCHELL, a NOTARY PUBLIC in and for said County, do hereby certify that the foregoing petitioners personally appeared before me and acknowledged severally that they signed the foregoing petition as their free and voluntary act for the uses and purposes therein set forth.

Given under my hand and notarial seal this 14th day of September, 1893.

G. R. MITCHELL,

[SEAL]

NOTARY PUBLIC, COOK COUNTY, ILL.

CHANGE OF NAME

Pursuant to a resolution passed at a meeting of the corporate members held the 25th day of June, 1894, the name of the COLUMBIAN MUSEUM was changed to FIELD COLUMBIAN MUSEUM. A certificate to this effect was filed June 26, 1894, in the office of the Secretary of State for Illinois.

CHANGE OF NAME

Pursuant to a resolution passed at a meeting of the corporate members held the 8th day of November, 1905, the name of the FIELD COLUMBIAN MUSEUM was changed to FIELD MUSEUM OF NATURAL HISTORY. A certificate to this effect was filed November 10, 1905, in the office of the Secretary of State for Illinois.

CHANGE IN ARTICLE 3

Pursuant to a resolution passed at a meeting of the corporate members held the 10th day of May, 1920, the management of FIELD MUSEUM OF NATURAL HISTORY shall be invested in a Board of TWENTY-ONE (21) TRUSTEES, who shall be elected in such manner and for such time and term of office as may be provided for by the By-Laws. A certificate to this effect was filed May 21, 1920, in the office of the Secretary of State for Illinois.

AMENDED BY-LAWS

DECEMBER, 1939

ARTICLE I

MEMBERS

SECTION 1. Members shall be of twelve classes, Corporate Members, Honorary Members, Patrons, Corresponding Members, Benefactors, Contributors, Life Members, Non-Resident Life Members, Associate Members, Non-Resident Associate Members, Sustaining Members, and Annual Members.

SECTION 2. The Corporate Members shall consist of the persons named in the articles of incorporation, and of such other persons as shall be chosen from time to time by the Board of Trustees at any of its meetings, upon the recommendation of the Executive Committee; provided, that such person named in the articles of incorporation shall, within ninety days from the adoption of these By-Laws, and persons hereafter chosen as Corporate Members shall, within ninety days of their election, pay into the treasury the sum of Twenty Dollars (\$20.00) or more. Corporate Members becoming Life Members, Patrons or Honorary Members shall be exempt from dues. Annual meetings of said Corporate Members shall be held at the same place and on the same day that the annual meeting of the Board of Trustees is held.

SECTION 3. Honorary Members shall be chosen by the Board from among persons who have rendered eminent service to science, and only upon unanimous nomination of the Executive Committee. They shall be exempt from all dues.

SECTION 4. Patrons shall be chosen by the Board upon recommendation of the Executive Committee from among persons who have rendered eminent service to the Museum. They shall be exempt from all dues, and, by virtue of their election as Patrons, shall also be Corporate Members.

SECTION 5. Any person contributing or devising the sum of One Hundred Thousand Dollars (\$100,000.00) in cash, or securities, or property to the funds of the Museum, may be elected a Benefactor of the Museum.

SECTION 6. Corresponding Members shall be chosen by the Board from among scientists or patrons of science residing in foreign countries, who render important service to the Museum. They shall be elected by the Board of Trustees at any of its meetings. They shall be exempt from all dues and shall enjoy all courtesies of the Museum.

SECTION 7. Any person contributing to the Museum One Thousand Dollars (\$1,000.00) or more in cash, securities, or material, may be elected a Contributor of the Museum. Contributors shall be exempt from all dues and shall enjoy all courtesies of the Museum.

SECTION 8. Any person paying into the treasury the sum of Five Hundred Dollars (\$500.00) at any one time, shall, upon the unanimous vote of the Board, become a Life Member. Life Members shall be exempt from all dues, and shall enjoy all the privileges and courtesies of the Museum that are accorded to members of the Board of Trustees. Any person residing fifty miles or more from the city of Chicago, paying into the treasury the sum of One Hundred Dollars (\$100.00) at any one time, shall, upon the unanimous vote of the Board, become a Non-Resident Life Member. Non-Resident Life Members shall be exempt from all dues, and shall enjoy all the privileges and courtesies of the Museum that are accorded to members of the Board of Trustees.

SECTION 9. Any person paying into the treasury of the Museum the sum of One Hundred Dollars (\$100.00) at any one time, shall, upon the vote of the Board, become an Associate Member. Associate Members shall be exempt from all dues, and shall be entitled to tickets admitting Member and members of family, including non-resident home guests; all publications of the Museum issued during the period of their membership, if so desired; reserved seats for all lectures and enter-

tainments under the auspices of the Museum, provided reservation is requested in advance; and admission of holder of membership and accompanying party to all special exhibits and Museum functions day or evening. Any person residing fifty miles or more from the city of Chicago, paying into the treasury the sum of Fifty Dollars (\$50.00) at any one time, shall, upon the unanimous vote of the Board, become a Non-Resident Associate Member. Non-Resident Associate Members shall be exempt from all dues, and shall enjoy all the privileges and courtesies of the Museum that are accorded to Associate Members.

SECTION 10. Sustaining Members shall consist of such persons as are selected from time to time by the Board of Trustees at any of its meetings, and who shall pay an annual fee of Twenty-five Dollars (\$25.00), payable within thirty days after notice of election and within thirty days after each recurring annual date. This Sustaining Membership entitles the member to free admission for the Member and family to the Museum on any day, the Annual Report and such other Museum documents or publications issued during the period of their membership as may be requested in writing. When a Sustaining Member has paid the annual fee of \$25.00 for six years, such Member shall be entitled to become an Associate Member.

SECTION 11. Annual Members shall consist of such persons as are selected from time to time by the Board of Trustees at any of its meetings, and who shall pay an annual fee of Ten Dollars (\$10.00), payable within thirty days after each recurring annual date. An Annual Membership shall entitle the Member to a card of admission for the Member and family during all hours when the Museum is open to the public, and free admission for the Member and family to all Museum lectures or entertainments. This membership will also entitle the holder to the courtesies of the membership privileges of every Museum of note in the United States and Canada, so long as the existing system of co-operative interchange of membership tickets shall be maintained, including tickets for any lectures given under the auspices of any of the Museums during a visit to the cities in which the co-operative museums are located.

SECTION 12. All membership fees, excepting Sustaining and Annual, shall hereafter be applied to a permanent Membership Endowment Fund, the interest only of which shall be applied for the use of the Museum as the Board of Trustees may order.

ARTICLE II

BOARD OF TRUSTEES

SECTION 1. The Board of Trustees shall consist of twenty-one members. The respective members of the Board now in office, and those who shall hereafter be elected, shall hold office during life. Vacancies occurring in the Board shall be filled at a regular meeting of the Board, upon the nomination of the Executive Committee made at a preceding regular meeting of the Board, by a majority vote of the members of the Board present.

SECTION 2. Regular meetings of the Board shall be held on the third Monday of the month. Special meetings may be called at any time by the President, and shall be called by the Secretary upon the written request of three Trustees. Five Trustees shall constitute a quorum, except for the election of officers or the adoption of the Annual Budget, when seven Trustees shall be required, but meetings may be adjourned by any less number from day to day, or to a day fixed, previous to the next regular meeting.

SECTION 3. Reasonable written notice, designating the time and place of holding meetings, shall be given by the Secretary.

ARTICLE III

HONORARY TRUSTEES

SECTION 1. As a mark of respect, and in appreciation of services performed for the Institution, any Trustee who by reason of inability, on account of change of residence, or for other cause or from indisposition to serve longer in such capacity shall resign his place upon the Board, may be elected, by a majority of those present at any regular meeting of the Board, an Honorary Trustee for life. Such Honorary Trustee will receive notice of all meetings of the Board of Trustees, whether regular or special, and will be expected to be present at all such meetings

and participate in the deliberations thereof, but an Honorary Trustee shall not have the right to vote.

ARTICLE IV

OFFICERS

SECTION 1. The officers shall be a President, a First Vice-President, a Second Vice-President, a Third Vice-President, a Secretary, an Assistant Secretary and a Treasurer. They shall be chosen by ballot by the Board of Trustees, a majority of those present and voting being necessary to elect. The President, the First Vice-President, the Second Vice-President, and the Third Vice-President shall be chosen from among the members of the Board of Trustees. The meeting for the election of officers shall be held on the third Monday of January of each year, and shall be called the Annual Meeting.

SECTION 2. The officers shall hold office for one year, or until their successors are elected and qualified, but any officer may be removed at any regular meeting of the Board of Trustees by a vote of two-thirds of all the members of the Board. Vacancies in any office may be filled by the Board at any meeting.

SECTION 3. The officers shall perform such duties as ordinarily appertain to their respective offices, and such as shall be prescribed by the By-Laws, or designated from time to time by the Board of Trustees.

ARTICLE V

THE TREASURER

SECTION 1. The Treasurer shall be custodian of the funds of the Corporation except as hereinafter provided. He shall make disbursements only upon warrants drawn by the Director and countersigned by the President. In the absence or inability of the Director, warrants may be signed by the Chairman of the Finance Committee, and in the absence or inability of the President, may be countersigned by one of the Vice-Presidents, or any member of the Finance Committee.

SECTION 2. The securities and muniments of title belonging to the corporation shall be placed in the custody of some Trust Company of Chicago to be designated by the Board of Trustees, which Trust Company shall collect the income and principal of said securities as the same become due, and pay same to the Treasurer, except as hereinafter provided. Said Trust Company shall allow access to and deliver any or all securities or muniments of title to the joint order of the following officers, namely: the President or one of the Vice-Presidents, jointly with the Chairman, or one of the Vice-Chairmen, of the Finance Committee of the Museum. The President or any one of the Vice-Presidents, jointly with either the Chairman or any one of the other members of the Finance Committee, are authorized and empowered (a) to sell, assign and transfer as a whole or in part the securities owned by or registered in the name of Field Museum of Natural History, and, for that purpose, to endorse certificates in blank or to a named person, appoint one or more attorneys, and execute such other instruments as may be necessary, and (b) to cause any securities belonging to this Corporation now, or acquired in the future, to be held or registered in the name or names of a nominee or nominees designated by them.

SECTION 3. The Treasurer shall give bond in such amount, and with such sureties as shall be approved by the Board of Trustees.

SECTION 4. The Harris Trust & Savings Bank of Chicago shall be Custodian of "The N. W. Harris Public School Extension of Field Museum" fund. The bank shall make disbursements only upon warrants drawn by the Director and countersigned by the President. In the absence or inability of the Director, warrants may be signed by the Chairman of the Finance Committee, and in the absence or inability of the President, may be countersigned by one of the Vice-Presidents, or any member of the Finance Committee.

ARTICLE VI

THE DIRECTOR

SECTION 1. The Board of Trustees shall elect a Director of the Museum, who shall remain in office until his successor shall be elected. He shall have im-

mediate charge and supervision of the Museum, and shall control the operations of the Institution, subject to the authority of the Board of Trustees and its Committees. The Director shall be the official medium of communication between the Board, or its Committees, and the scientific staff and maintenance force.

SECTION 2. There shall be four scientific Departments of the Museum—Anthropology, Botany, Geology, and Zoology; each under the charge of a Chief Curator, subject to the authority of the Director. The Chief Curators shall be appointed by the Board upon the recommendation of the Director, and shall serve during the pleasure of the Board. Subordinate staff officers in the scientific Departments shall be appointed and removed by the Director upon the recommendation of the Chief Curators of the respective Departments. The Director shall have authority to employ and remove all other employees of the Museum.

SECTION 3. The Director shall make report to the Board at each regular meeting, recounting the operations of the Museum for the previous month. At the Annual Meeting, the Director shall make an Annual Report, reviewing the work for the previous year, which Annual Report shall be published in pamphlet form for the information of the Trustees and Members, and for free distribution in such number as the Board may direct.

ARTICLE VII

THE AUDITOR

SECTION 1. The Board shall appoint an Auditor, who shall hold his office during the pleasure of the Board. He shall keep proper books of account, setting forth the financial condition and transactions of the Corporation, and of the Museum, and report thereon at each regular meeting, and at such other times as may be required by the Board. He shall certify to the correctness of all bills rendered for the expenditure of the money of the Corporation.

ARTICLE VIII

COMMITTEES

SECTION 1. There shall be five Committees, as follows: Finance, Building, Auditing, Pension, and Executive.

SECTION 2. The Finance Committee shall consist of six members, the Auditing and Pension Committees shall each consist of three members, and the Building Committee shall consist of five members. All members of these four Committees shall be elected by ballot by the Board at the Annual Meeting, and shall hold office for one year, and until their successors are elected and qualified. In electing the members of these Committees, the Board shall designate the Chairman and Vice-Chairman by the order in which the members are named in the respective Committee; the first member named shall be Chairman, the second named the Vice-Chairman, and the third named, Second Vice-Chairman, succession to the Chairmanship being in this order in the event of the absence or disability of the Chairman.

SECTION 3. The Executive Committee shall consist of the President of the Board, the Chairman of the Finance Committee, the Chairman of the Building Committee, the Chairman of the Auditing Committee, the Chairman of the Pension Committee, and three other members of the Board to be elected by ballot at the Annual Meeting.

SECTION 4. Four members shall constitute a quorum of the Executive Committee, and in all standing Committees two members shall constitute a quorum. In the event that, owing to the absence or inability of members, a quorum of the regularly elected members cannot be present at any meeting of any Committee, then the Chairman thereof, or his successor, as herein provided, may summon any members of the Board of Trustees to act in place of the absentee.

SECTION 5. The Finance Committee shall have supervision of investing the endowment and other permanent funds of the Corporation, and the care of such real estate as may become its property. It shall have authority to invest, sell, and reinvest funds, subject to the approval of the Board.

SECTION 6. The Building Committee shall have supervision of the construction, reconstruction, and extension of any and all buildings used for Museum purposes.

SECTION 7. The Executive Committee shall be called together from time to time as the Chairman may consider necessary, or as he may be requested to do by three members of the Committee, to act upon such matters affecting the administration of the Museum as cannot await consideration at the Regular Monthly Meetings of the Board of Trustees. It shall, before the beginning of each fiscal year, prepare and submit to the Board an itemized Budget, setting forth the probable receipts from all sources for the ensuing year, and make recommendations as to the expenditures which should be made for routine maintenance and fixed charges. Upon the adoption of the Budget by the Board, the expenditures stated are authorized.

SECTION 8. The Auditing Committee shall have supervision over all accounting and bookkeeping, and full control of the financial records. It shall cause the same, once each year, or oftener, to be examined by an expert individual or firm, and shall transmit the report of such expert individual or firm to the Board at the next ensuing regular meeting after such examination shall have taken place.

SECTION 9. The Pension Committee shall determine by such means and processes as shall be established by the Board of Trustees to whom and in what amount the Pension Fund shall be distributed. These determinations or findings shall be subject to the approval of the Board of Trustees.

SECTION 10. The Chairman of each Committee shall report the acts and proceedings thereof at the next ensuing regular meeting of the Board.

SECTION 11. The President shall be ex-officio a member of all Committees and Chairman of the Executive Committee. Vacancies occurring in any Committee may be filled by ballot at any regular meeting of the Board.

ARTICLE IX

NOMINATING COMMITTEE

SECTION 1. At the November meeting of the Board each year, a Nominating Committee of three shall be chosen by lot. Said Committee shall make nominations for membership of the Finance Committee, the Building Committee, the Auditing Committee, and the Pension Committee, and for three members of the Executive Committee, from among the Trustees, to be submitted at the ensuing December meeting and voted upon at the following Annual Meeting in January.

ARTICLE X

SECTION 1. Whenever the word "Museum" is employed in the By-Laws of the Corporation, it shall be taken to mean the building in which the Museum as an Institution is located and operated, the material exhibited, the material in study collections, or in storage, furniture, fixtures, cases, tools, records, books, and all appurtenances of the Institution and the workings, researches, installations, expenditures, field work, laboratories, library, publications, lecture courses, and all scientific and maintenance activities.

SECTION 2. These By-Laws may be amended at any regular meeting of the Board of Trustees by a two-thirds vote of all the members present, provided the amendment shall have been proposed at a preceding regular meeting.

BEQUESTS

Bequests to Field Museum of Natural History may be made in securities, money, books or collections. They may, if desired, take the form of a memorial to a person or cause, to be named by the giver. For those desirous of making bequests to the Museum, the following form is suggested:

FORM OF BEQUEST

I do hereby give and bequeath to Field Museum of Natural History of the City of Chicago, State of Illinois, _____

Contributions made within the taxable year to Field Museum of Natural History to an amount not in excess of 15 per cent of the taxpayer's net income are allowable as deductions in computing net income for federal income tax purposes.

Endowments may be made to the Museum with the provision that an annuity be paid to the patron during his or her lifetime. These annuities are guaranteed against fluctuation in amount and may reduce federal income taxes.

FOUNDER

Marshall Field*

BENEFACTORS

Those who have contributed \$100,000 or more to the Museum

Ayer, Edward E.*	Harris, Albert W.	Raymond, James Nelson*
Buckingham, Miss Kate S.*	Harris, Norman W.*	Ryerson, Martin A.*
Crane, Cornelius	Higinbotham, Harlow N.*	Ryerson, Mrs. Martin A.*
Crane, R. T., Jr.*	Kelley, William V.*	Simpson, James*
Field, Joseph N.*	Pullman, George M.*	Smith, Mrs. Frances Gaylord*
Field, Marshall	Rawson, Frederick H.*	Smith, George T.*
Field, Stanley	Raymond, Mrs. Anna Louise	Sturges, Mrs. Mary D.*
Graham, Ernest R.*		Suarez, Mrs. Diego

* DECEASED

HONORARY MEMBERS

Those who have rendered eminent service to Science

Cutting, C. Suydam	Ludwig, H. R. H. Gustaf Adolf, Crown Prince of Sweden	Roosevelt, Theodore
Field, Marshall	McCormick, Stanley	Sargent, Homer E.
Field, Stanley		Sprague, Albert A.
		Suarez, Mrs. Diego
Harris, Albert W.	Roosevelt, Kermit	Vernay, Arthur S.

PATRONS

Those who have rendered eminent service to the Museum

Armour, Allison V.	Ellsworth, Duncan S.	Roosevelt, Kermit
Calderini, Charles J.	Field, Mrs. Stanley	Roosevelt, Theodore
Chadbourn, Mrs. Emily Crane	Hack, Frederick C.	Sargent, Homer E.
Chancellor, Philip M.	Hancock, G. Allan	Sprague, Albert A.
Cherrie, George K.	Kennedy, Vernon Shaw	Straus, Mrs. Oscar
Collins, Alfred M.	Knight, Charles R.	Strawn, Silas H.
Conover, Boardman	Moore, Mrs. William H.	Suarez, Mrs. Diego
Cutting, C. Suydam	Probst, Edward	Vernay, Arthur S.
Day, Lee Garnett		Wegeforth, Dr. Harry M.
		White, Harold A.

DECEASED, 1940

Cummings, Mrs. Robert F.

CORRESPONDING MEMBERS

Scientists or patrons of science, residing in foreign countries, who have rendered eminent service to the Museum

Breuil, Abbé Henri	Hochreutiner, Dr. B. P.	Keissler, Dr. Karl
Christensen, Dr. Carl	Georges	
Diels, Dr. Ludwig	Humbert, Professor	Keith, Professor Sir
	Henri	Arthur

CONTRIBUTORS

Those who have contributed \$1,000 to \$100,000 to the Museum in money or materials

<i>\$75,000 to \$100,000</i>	Everard, R. T.*	Harris, Hayden B.
Chancellor, Philip M.	Gunsaulus, Dr. F. W.*	Harris, Norman Dwight
	Insull, Samuel*	Harris, Mrs. Norman W.*
<i>\$50,000 to \$75,000</i>	Laufer, Dr. Berthold*	Hutchinson, C. L.*
Keep, Chauncey*	Lufkin, Wallace W.	Keith, Edson*
Rosenwald, Mrs.	McCormick, Cyrus	Langtry, J. C.
Augusta N.*	(Estate)	MacLean, Mrs. M.
	McCormick, Stanley	Madson
<i>\$25,000 to \$50,000</i>	Mitchell, John J.*	Mandel, Leon
Adams, Mrs. Edith	Reese, Lewis*	Moore, Mrs. William H.
Almy*	Robb, Mrs. George W.	Payne, John Barton*
Blackstone, Mrs.	Rockefeller Foundation,	Pearsons, D. K.*
Timothy B.*	The	Porter, H. H.*
Coats, John*	Sargent, Homer E.	Ream, Norman B.*
Crane, Charles R.*	Schweppe, Mrs.	Revell, Alexander H.*
	Charles H.*	
Field, Mrs. Stanley	Straus, Mrs. Oscar	Salie, Prince M. U. M.
Jones, Arthur B.*	Strong, Walter A.*	Sprague, A. A.*
Murphy, Walter P.	Wrigley, William, Jr.*	Strawn, Silas H.
Porter, George F.*		Thorne, Bruce
Rosenwald, Julius*	<i>\$5,000 to \$10,000</i>	Tree, Lambert*
Vernay, Arthur S.	Adams, George E.*	
White, Harold A.	Adams, Milward*	<i>\$1,000 to \$5,000</i>
	American Friends of	Avery, Miss Clara A.*
	China	Ayer, Mrs. Edward E.*
	Avery, Sewell L.	
<i>\$10,000 to \$25,000</i>	Bartlett, A. C.*	Barrett, Samuel E.*
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Armour, P. D.*	Borland, Mrs. John Jay*	Blair, Watson F.*
Chadbourn, Mrs. Emily	Crane, R. T.*	Blaschke, Stanley
Crane	Doane, J. W.*	Field
Chalmers, William J.*		Block, Mrs. Helen M.*
Conover, Boardman	Field, Dr. Henry	Borden, John
Cummings, R. F.*	Fuller, William A.*	Chalmers, Mrs.
Cutting, C. Suydam	Graves, George Coe, II*	William J.*
		Chicago Zoological
		Society, The
		Crane, Mrs. R. T., Jr.

Crocker, Templeton
Cummings, Mrs.

Robert F.*

Doering, O. C.

Fish, Mrs. Frederick S.

Graves, Henry, Jr.
Gunsaulus, Miss Helen

Hibbard, W. G.*

Higginson, Mrs.

Charles M.*

Hill, James J.*

Hixon, Frank P.*

Hoffman, Miss Malvina

Hughes, Thomas S.

Jackson, Huntington W.*

James, S. L.

* DECEASED

Knickerbocker,
Charles K.*

Lee Ling Yün
Lerner, Michael

Look, Alfred A.

Mandel, Fred L., Jr.

Manierre, George*

Martin, Alfred T.*

McCormick, Cyrus II.*

McCormick, Mrs. Cyrus*

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Osgood, Dr. Wilfred H.

Palmer, Potter

Patten, Henry J.

Prentice, Mrs.

Clarence C.

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Raymond, Charles E.*

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Rumely, William N.*

Schwab, Martin C.

Schweppé, Charles H.

Shaw, William W.

Sherff, Dr. Earl E.

Smith, Byron L.*

Sprague, Albert A.

Thompson, E. H.*

Thorne, Mrs. Louise E.

VanValzah, Dr. Robert

VonFrantz, Fritz*

Wheeler, Leslie*

Willis, L. M.

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Armour, Lester

Avery, Sewell L.

Blair, W. McCormick

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Borden, John

Byram, Harry E.

Calderini, Charles J.

Chadbourne, Mrs. Emily

Crane

Chancellor, Philip M.

Chatfield-Taylor, H. C.

Cherrie, George K.

Collins, Alfred M.

Conover, Boardman

Cummings, Walter J.

Cutting, C. Suydam

Day, Lee Garnett

Dick, Albert B., Jr.

Ellsworth, Duncan S.

Field, Joseph N.

Field, Marshall

Field, Stanley

Field, Mrs. Stanley

Hack, Frederick C.

Hancock, G. Allan

Harris, Albert W.

Insull, Samuel, Jr.

Kennedy, Vernon Shaw

Knight, Charles R.

McCulloch, Charles A.

Mitchell, William H.

Moore, Mrs. William H.

Probst, Edward

Richardson, George A.

Roosevelt, Kermit

Roosevelt, Theodore

Sargent, Fred W.

Sargent, Homer E.

Smith, Solomon A.

Sprague, Albert A.

Straus, Mrs. Oscar

Strawn, Silas H.

Suarez, Mrs. Diego

Vernay, Arthur S.

Wegeforth, Dr. Harry M

Wetten, Albert H.

White, Harold A.

Wilson, John P.

DECEASED, 1910

Cummings, Mrs. Robert F.

LIFE MEMBERS

Those who have contributed \$500 to the Museum

Abbott, John Jay

Adler, Max

Allerton, Robert H.

Ames, James C.

Armour, Allison V.

Armour, A. Watson

Armour, Lester

Armour, Mrs. Ogden

Ascoli, Mrs. Max

Asher, Louis E.

Avery, Sewell L.

Babson, Henry B.

Bacon, Edward

Richardson, Jr.

Banks, Alexander F.

Barnhart, Miss Gracia

M. F.

Barrett, Mrs. A. D.

Barrett, Robert L.

Bartlett, Miss Florence

Dibell

Baur, Mrs. Jacob

Bendix, Vincent

Bensabott, R.

Birmingham, Edward J.

Blaine, Mrs. Emmons

Blair, Chauncey B.
 Block, Leopold E.
 Block, Philip D.
 Booth, W. Vernon
 Borden, John
 Borland, Chauncey B.
 Brassert, Herman A.
 Brewster, Walter S.
 Brown, Charles
 Edward
 Browne, Aldis J.
 Buchanan, D. W.
 Budd, Britton I.
 Burnham, John
 Burt, William G.
 Butler, Julius W.
 Butler, Rush C.
 Byram, Harry E.

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 Carpenter, Mrs. Hubbard
 Carpenter, Mrs. John
 Alden
 Carr, George R.
 Carr, Robert F.
 Carr, Walter S.
 Casalis, Mrs. Maurice
 Chatfield-Taylor, Wayne
 Clark, Eugene B.
 Clegg, William G.
 Clegg, Mrs. William G.
 Clow, William E.
 Collins, William M.
 Conover, Boardman
 Cook, Mrs.
 Daphne Field
 Corley, F. D.
 Cramer, Corwith
 Crossett, Edward C.
 Crossley, Lady Josephine
 Crossley, Sir Kenneth
 Crowell, H. P.
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 Cudahy, Edward A., Jr.
 Cudahy, Joseph M.
 Cummings, Walter J.
 Cunningham, Frank S.
 Cunningham, James D.
 Cushing, Charles G.

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 Dawes, Henry M.
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 Delano, Frederic A.
 Dick, Albert B., Jr.
 Dierssen, Ferdinand W.
 Dixon, Homer L.
 Donnelley, Thomas E.
 Doyle, Edward J.
 Drake, John B.
 Durand, Scott S.

Edmunds, Philip S.
 Ely, Mrs. C. Morse
 Epstein, Max
 Everitt, George B.
 Ewing, Charles Hull

Farnum, Henry W.
 Farr, Newton Camp
 Farr, Miss Shirley
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 Farwell, John V.
 Farwell, Walter
 Fay, C. N.
 Fenton, Howard W.
 Fentress, Calvin
 Fernald, Charles
 Field, Joseph N.
 Field, Marshall
 Field, Norman
 Field, Mrs. Norman
 Field, Stanley
 Field, Mrs. Stanley

Gardner, Robert A.
 Gartz, A. F., Jr.
 Gary, Mrs. John W.
 Gilbert, Huntly H.
 Glone, Charles F.
 Goodspeed, Charles B.
 Gowing, J. Parker

Hack, Frederick C.
 Hamill, Alfred E.
 Hamill, Mrs. Ernest A.
 Harris, Albert W.
 Harris, Norman W.
 Hastings, Samuel M.
 Hayes, William F.
 Hecht, Frank A., Jr.
 Heineman, Oscar
 Hemmens, Mrs.
 Walter P.
 Hibbard, Frank
 Hickox, Mrs. Charles V.
 Hill, Louis W.
 Hinde, Thomas W.
 Hixon, Robert
 Hopkins, J. M.
 Hopkins, L. J.
 Horowitz, L. J.
 Hoyt, N. Landon
 Hughes, Thomas S.
 Hutchins, James C.

Insull, Martin J.
 Insull, Samuel, Jr.

Jarnagin, William N.
 Jelke, John F., Jr.
 Johnson, Mrs. Elizabeth
 Ayer
 Joiner, Theodore E.
 Jones, Miss Gwethalyn

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 Kidston, William H.
 King, Charles Garfield
 King, James G.
 Kirk, Walter Radcliffe

Ladd, John
 Lamont, Robert P.
 Lehmann, E. J.
 Leonard, Clifford M.
 Leopold, Mrs. Harold E.
 Levy, Mrs. David M.
 Linn, Mrs. Dorothy C.
 Logan, Spencer H.
 Lowden, Frank O.
 Lytton, Henry C.

MacDowell, Charles H.
 MacLeish, John E.
 MacVeagh, Eames
 Madlener, Mrs. Albert F.
 Marshall, Benjamin H.
 Mason, William S.
 McBain, Hughston M.
 McCormick, Harold F.
 McCormick, Stanley
 McCulloch, Charles A.
 McCutcheon, John T.
 McGann, Mrs. Robert G.
 McIlvaine, William B.
 McInnerney, Thomas H.
 McKinlay, John
 McLaughlin, Frederic
 McLennan, D. R.
 McNulty, T. J.
 Meyer, Carl
 Meyne, Gerhardt F.
 Mitchell, William H.
 Moore, Edward S.
 Morse, Charles H.
 Morton, Mark
 Munroe, Charles A.
 Murphy, Walter P.

Newell, A. B.
 Nikolas, G. J.

Ormsby, Dr. Oliver S.
 Orr, Robert M.

Paesch, Charles A.
 Palmer, Honore
 Palmer, Potter
 Patterson, Joseph M.
 Payson, George S.
 Peabody, Stuyvesant
 Pick, Albert
 Pike, Charles B.
 Pike, Eugene R.
 Poppenhusen, Conrad H.
 Porter, Gilbert E.
 Prentice, Mrs.
 Clarence C.

Raymond, Mrs. Anna Louise	Smith, Solomon A.	Uihlein, Edgar J.
Reynolds, Arthur	Spalding, Keith	Underwood, Morgan P.
Reynolds, Earle H.	Spalding, Vaughan C.	
Riley, Harrison B.	Sprague, Albert A.	Veatch, George L.
Rinaldo, Mrs. Philip S.	Sprague, Mrs. Albert A.	
Robinson, Theodore W.	Stewart, Robert W.	Wanner, Harry C.
Robson, Miss Alice	Stirton, Robert C.	Ward, P. C.
Rodman, Mrs. Katherine Field	Strawn, Silas H.	Welch, Mrs. Edwin P.
Rodman, Thomas Clifford	Stuart, Harry L.	Welling, John P.
Rosenwald, William	Stuart, John	Whitney, Mrs. Julia I.
Russell, Edmund A.	Stuart, R. Douglas	Wickwire, Mrs. Edward L.
Ryerson, Edward L., Jr.	Sturges, George	Wieboldt, William A.
	Sunny, B. E.	Willard, Alonzo J.
Schweppe, Charles H.	Swift, Charles H.	Willits, Ward W.
Scott, Harold N.	Swift, G. F., Jr.	Wilson, John P.
Seabury, Charles W.	Swift, Harold H.	Wilson, Thomas F.
Shaffer, John C.		Winston, Garrard B.
Shirk, Joseph H.	Thorne, Charles H.	Winter, Wallace C.
Simpson, William B.	Thorne, Robert J.	Woolley, Clarence M.
Smith, Alexander	Tree, Ronald L. F.	Wrigley, Philip K.
	Tyson, Russell	Yates, David M.
DECEASED, 1910		
Abbott, Robert S.	Ferguson, Louis A.	Russell, Edward P.
Chalmers, Mrs. William J.	Knickerbocker, Charles K.	Sargent, Fred W.
Davies, Mrs. D. C.	Noel, Joseph R.	Storey, W. B.
Dawes, Rufus C.	Reynolds, George M.	Valentine, Louis L.

NON-RESIDENT LIFE MEMBERS

Those, residing fifty miles or more from the city of Chicago, who have contributed \$100 to the Museum

Clas, Miss Mary Louise	Hearne, Knox	Stephens, W. C.
Coolidge, Harold J., Jr.	Johnson, Herbert F., Jr.	Stern, Mrs. Edgar B.
Copley, Ira Cliff		
Ellis, Ralph	Rosenwald, Lessing J.	Vernay, Arthur S.
Gregg, John Wyatt	Siebel, Emil A.	Zerk, Oscar U.

ASSOCIATE MEMBERS

Those who have contributed \$100 to the Museum

- Aaron, Charles
 Aaron, Ely M.
 Abbott, Donald
 Putnam, Jr.
 Abbott, Gordon C.
 Abbott, Guy H.
 Abbott, W. Rufus
 Abbott, William L.
 Abrahamsen, Miss Cora
 Abrams, Duff A.
 Ackerman, Charles N.
 Adamick, Gustave H.
 Adams, Benjamin Stearns
 Adams, Mrs. Charles S.
 Adams, Mrs. David T.
 Adams, Mrs. Frances
 Spragle
 Adams, Miss Jane
 Adams, John Q.
 Adams, Joseph
 Adams, Mrs. S. H.
 Adams, Mrs. Samuel
 Adams, William C.
 Adamson, Henry T.
 Adcock, Mrs. Bessie
 Adler, David
 Adler, Mrs. Max
 Afleck, Benjamin F.
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 Alden, William T.
 Aldis, Graham
 Alexander, Mrs. Arline V.
 Alexander, Edward
 Alford, Mrs. Laura T. C.
 Allen, Mrs. Fred G.
 Allensworth, A. P.
 Alsip, Charles H.
 Alsip, Mrs. Charles H.
 Alter, Harry
 Alton, Carol W.
 Ames, Rev. Edward S.
 Andersen, Arthur
 Anderson, Miss Florence
 Regina
 Andreen, Otto C.
 Andrews, Mrs. E. C.
 Andrews, Milton H.
 Anstiss, George P.
 Appelt, Mrs. Jessie E.
 Armbrust, John T.
 Armbruster, Charles A.
 Armour, A. Watson, III
 Armour, Laurence H.
 Armour, Philip D.
 Armstrong, Mrs. Julian
 Armstrong, Kenneth E.
 Arn, W. G.
 Arnold, Mrs. Lloyd
 Artingstall, Samuel
 G., Jr.
 Ascher, Fred
 Ashby, W. B.
 Ashcraft, Raymond M.
 Ashenhurst, Harold S.
 Atkinson, Charles T.
 Atwater, Walter Hull
 Aurelius, Mrs. Marcus A.
 Austin, E. F.
 Austin, Henry W.
 Avery, George J.
 Baackes, Mrs. Frank
 Babb, W. E.
 Babson, Mrs. Gustavus
 Bachmann, Mrs.
 Harrold A.
 Bachmeyer, Dr.
 Arthur C.
 Bacon, Dr. Alfons R.
 Badger, Shreve Cowles
 Baer, Mervin K.
 Baer, Walter S.
 Baggaley, William Blair
 Baird, Harry K.
 Baker, Mrs. Alfred L.
 Baker, G. W.
 Baker, Greeley
 Baldwin, Mrs.
 Katharine W.
 Baldwin, Vincent Curtis
 Balgemann, Otto W.
 Balkin, Louis
 Ball, Dr. Fred E.
 Ball, Sidney Y.
 Ballard, Mrs. Foster K.
 Ballenger, A. G.
 Bancs, W. C.
 Banks, Edgar C.
 Bannister, Miss Ruth D.
 Bantsolas, John N.
 Barber, Phil C.
 Barbour, James J.
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 Barnes, James M.
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 Barnum, Harry H.
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 Barrett, Mrs. A. M.
 Bartelme, John H.
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 Bartholomay, F. H.
 Bartholomay, Henry
 Bartholomay, Mrs.
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 Bartlett, Frederic C.
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 Bates, Joseph A.
 Battey, Paul L.
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 Baum, Wilhelm
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 Becker, Benjamin V.
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 Becker, James H.
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 Becker, Louis L.
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 Benner, Harry
 Bennett, Professor
 J. Gardner
 Bennett, Reid M.
 Benson, John
 Benson, Mrs.
 Thaddeus R.
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 Bentley, Mrs. Cyrus
 Benton, Miss Mabel M.
 Berend, George F.
 Berger, Dr. John M.
 Berkowitz, Dr. J. G.
 Berkson, Mrs. Maurice
 Borryman, John B.
 Bersbach, Elmer S.
 Bertol, Miss Aurelia
 Bertschinger, Dr. C. F.
 Besly, Mrs. C. H.
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 Bevan, Dr. Arthur Dean
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- Bidwell, Charles W.
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 Billow, Miss Virginia
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 Birk, Miss Amelia
 Birk, Frank J.
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 Blair, Wolcott
 Blake, Tiffany
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 Blatchford, Dr. Frank Wicks
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 Blum, David
 Blum, Harry H.
 Blunt, J. E., Jr.
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 Boericke, Mrs. Anna
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 Bolten, Paul H.
 Bondy, Berthold
 Boomer, Dr. Paul C.
 Boone, Arthur
 Booth, Alfred V.
 Booth, George E.
 Borg, George W.
 Borland, Mrs. Bruce
 Borwell, Robert C.
 Bosch, Charles
 Bosch, Mrs. Henry
 Both, William C.
 Botts, Graeme G.
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 Bowen, Mrs. Louise DeKoven
 Bowes, William R.
 Bowey, Mrs. Charles F.
 Bowman, Johnston A.
 Boyack, Harry
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 Boyden, Miss Rosalie Sturges
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 Boynton, Frederick P.
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 Bradley, Mrs. Natalie
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 Brainerd, Mrs. Arthur T.
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 Brand, Mrs. Maude G.
 Brand, Mrs. Rudolf
 Brandes, A. G.
 Brandt, Charles H.
 Bransfield, John J.
 Brauer, Mrs. Paul
 Breckinridge, Professor S. P.
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 Bremner, Mrs. David F., Jr.
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 Brennan, Mrs. George E.
 Brennemann, Dr. Joseph
 Brennwasser, S. M.
 Brenza, Miss Mary
 Brewer, Mrs. Angeline L.
 Breyer, Mrs. Theodor
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 Briggs, Mrs. Gertrude
 Bristol, James T.
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 Brodribb, Lawrence C.
 Broome, Thornhill
 Brown, A. Wilder
 Brown, Christy
 Brown, Mrs. Everett C.
 Brown, John T.
 Brown, Dr. Joshua M.
 Brown, Mark A.
 Brown, Scott
 Brucker, Dr. Edward A.
 Bruckner, William T.
 Brugman, John J.
 Brundage, Avery
 Brunswick, Larry
 Brunt, J. P.
 Bryant, John J., Jr.
 Buck, Guy R.
 Buck, Mrs. Lillian B.
 Buck, Nelson Leroy
 Buckley, Mrs. Warren
 Bucklin, Mrs. Vail R.
 Budlong, Joseph J.
 Buehler, Mrs. Carl
 Buehler, H. L.
 Buettner, Walter J.
 Buffington, Mrs. Margaret A.
 Buhmann, Gilbert G.
 Bullock, Mrs. James E.
 Bunge, Mrs. Albert J.
 Bunte, Mrs. Theodore W.
 Burbott, E. W.
 Burch, Clayton B.
 Burdick, Mrs. Alfred S.
 Burgess, Charles F.
 Bugmeier, John M.
 Burgstreser, Newton
 Burgweger, Mrs. Meta Dewes
 Burke, Mrs. Lawrence N.
 Burke, Webster H.
 Burkholder, Dr. J. F.
 Burley, Mrs. Clarence A.
 Burnham, Frederic
 Burns, Mrs. Randall W.
 Burry, Mrs. William
 Burry, William, Jr.
 Burtch, Almon
 Bush, Mrs. Lionel F.
 Bush, Mrs. William H.
 Butler, Burrige D.
 Butler, Mrs. Hermon B.
 Butler, J. Fred
 Butler, John M.
 Butler, Paul
 Butz, Herbert R.
 Butz, Robert O.
 Butz, Theodore C.
 Butzow, Mrs. Robert C.
 Byfield, Dr. Albert H.
 Byrne, Miss Margaret H.
 Cable, J. Elmer
 Cahn, Dr. Alvin R.
 Cahn, Bertram J.
 Cahn, Morton D.
 Caine, John F.
 Callender, Mrs. Joseph E.
 Calmeyer, Frank B.
 Cameron, Dr. Dan U.
 Cameron, Will J.
 Camp, Mrs. Arthur Royce
 Campbell, Delwin M.
 Campbell, Herbert J.
 Canby, Caleb H., Jr.
 Canman, Richard W.
 Capes, Lawrence R.
 Capps, Dr. Joseph A.
 Cardelli, Mrs. Giovanni
 Carlin, Leo J.
 Carlson, Mrs. Arthur W.
 Carney, William Roy
 Caron, O. J.
 Carpenter, Mrs. Benjamin
 Carpenter, Frederic Ives
 Carpenter, Mrs. George A.
 Carpenter, George
 Sturges
 Carpenter, Hubbard

- Carpenter, Miss Rosalie Sturges, II
 Carpenter, W. W. S.
 Carqueville, Mrs. A. R.
 Carr, Mrs. Clyde M.
 Carroll, John A.
 Carry, Joseph C.
 Carter, Mrs. Armistead B.
 Carton, Alfred T.
 Cary, Dr. Eugene
 Casselberry, Mrs. William Evans, Sr.
 Cassels, Edwin II.
 Castle, Alfred C.
 Castruccio, Giuseppe
 Cates, Dudley
 Cernoch, Frank
 Chandler, Henry P.
 Chapin, Henry Kent
 Chapin, William Arthur
 Chapman, Arthur E.
 Chappell, Mrs. Charles II.
 Cheney, Dr. Henry W.
 Cherry, Walter L., Jr.
 Childs, Mrs. C. Frederick
 Childs, Mrs. George W.
 Chinnock, Mrs. Ronald J.
 Chisholm, George D.
 Chislett, Miss Kate E.
 Christiansen, Dr. Henry
 Chritton, George A.
 Churan, Charles A.
 Clark, Ainsworth W.
 Clark, Miss Alice Keep
 Clark, Charles V.
 Clark, Miss Dorothy S.
 Clark, Mrs. Edward S.
 Clark, Edwin H.
 Clark, Lincoln R.
 Clark, Dr. Peter S.
 Clarke, Charles F.
 Clarke, Harley L.
 Clay, John
 Clemen, Dr. Rudolf A.
 Cleveland, Paul W.
 Clinch, Duncan L.
 Clithero, W. S.
 Clonick, Seymour E.
 Clough, William H.
 Clow, Mrs. Harry B.
 Clow, William E., Jr.
 Cochran, John L.
 Coffin, Fred Y.
 Cohen, George B.
 Cohen, Mrs. L. Lewis
 Colburn, Frederick S.
 Colby, Mrs. George E.
 Coldren, Clifton C.
 Coleman, Clarence L., Jr.
 Coleman, Dr. George H.
 Coleman, Loring W.
 Colianni, Paul V.
 Collins, Beryl B.
 Collison, E. K.
 Colvin, Miss Catharine
 Colvin, Miss Jessie
 Colvin, Mrs. William II.
 Colwell, Clyde C.
 Compton, Mrs. Arthur II.
 Compton, D. M.
 Compton, Frank E.
 Condon, Mrs. James G.
 Conger, Miss Cornelia
 Connell, P. G.
 Connors, Harry
 Connor, Mrs. Clara A.
 Connor, Frank H.
 Cook, Miss Alice B.
 Cook, Mrs. David S.
 Cook, Jonathan Miller
 Cooke, Charles E.
 Cooke, Miss Flora
 Cooke, Leslie L.
 Coolidge, Miss Alice
 Coolidge, E. Channing
 Coolidge, Dr. Edgar D.
 Coombs, James F.
 Coonley, John Stuart
 Coonley, Prentiss L.
 Cooper, Samuel
 Copland, David
 Corbett, Mrs. William J.
 Cornell, Dr. Edward L.
 Cosford, Thomas II.
 Coston, James E.
 Cowan, Mrs. Grace L.
 Cox, James A.
 Cox, James C.
 Cox, Mrs. Rensselaer W.
 Cox, William D.
 Cragg, Mrs. George L.
 Crane, Charles R., II
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 Cregar, Mrs. John
 Crilly, Edgar
 Cromer, Clarence E.
 Cromwell, Miss Juliette Clara
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 Cubbins, Dr. William R.
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 Culbertson, Dr. Carey
 Cummings, Mrs. D. Mark
 Cummings, Mrs. Frances S.
 Cuneo, John F.
 Cunningham, John T.
 Curran, Harry R.
 Curtis, Austin
 Guthrie, Jr.
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 Curtis, Miss Frances II.
 Cusack, Harold
 Cushman, A. W.
 Cushman, Barney
 Cutler, Henry E.
 Cuttle, Harold E.
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 Daily, Richard
 Daley, Harry C.
 Dalmar, Mrs. Hugo
 Dalmar, Hugo, Jr.
 Dammann, J. F.
 Danforth, Dr. William C.
 Dangel, W. H.
 Dantzig, Leonard P.
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 Dashiell, C. R.
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 Davey, Mrs. Bruce C.
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 Davidson, Dr. Alexander L.
 Davidson, David W.
 Davidson, Miss Mary E.
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 Davis, Arthur
 Davis, Brode B.
 Davis, C. S.
 Davis, Dr. Carl B.
 Davis, Frank S.
 Davis, Fred M.
 Davis, James
 Davis, Dr. Loyal
 Davis, Dr. Nathan S., III
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 Deahl, Uriah S.
 Deane, Mrs. Ruthven
 Decker, Charles O.
 DeCosta, Lewis M.
 DeDardel, Carl O.
 Dee, Thomas J.
 Deery, Thomas A., Jr.
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- Dennis, Charles H.
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 Dick, Elmer J.
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 Dickinson, F. R.
 Dickinson, Robert B.
 Dickinson, Mrs.
 Thompson
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 Dimick, Miss Elizabeth
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 Dixon, George W., Jr.
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 Doering, Otto C.
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 Dolese, Mrs. John
 Donker, Mrs. William
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 Donnelley, Mrs. H. P.
 Donnelley, Miss Naomi
 Donnelly, Frank
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 Douglass, Mrs. W. A.
 Drake, Lyman M.
 Dreyfus, Mrs. Moise
 Dryden, Mrs. George R.
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 Dudley, Laurence H.
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 Dulany, George W., Jr.
 Dulsky, Mrs. Samuel
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 Duncan, Albert G.
 Duner, Dr. Clarence S.
 Duner, Joseph A.
 Dunham, John H.
 Dunham, Miss Lucy
 Belle
 Dunham, Robert J.
 Dunlop, Mrs. Simpson
 Dunn, Samuel O.
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 Eckhart, Percy B.
 Eckstein, Mrs. Louis
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 Eddy, Thomas H.
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 Edwards, Kenneth P.
 Egan, William B.
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 Ehrman, Edwin H.
 Eichengreen, Edmund K.
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 Eisendrath, Miss Elsa B.
 Eisendrath, Robert M.
 Eisendrath, William B.
 Eisenschimid, Mrs. Otto
 Eisenstaedt, Harry
 Eisenstein, Sol
 Eitel, Max
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 Elich, Robert William
 Ellbogen, Albert L.
 Ellbogen, Miss Celia
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 Ellis, Howard
 Elting, Howard
 Emery, Edward W.
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 Engel, E. J.
 Engel, Miss Henrietta
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 Ericsson, Clarence
 Ericsson, Dewey A.
 Ericsson, Henry
 Ericsson, Walter H.
 Ernst, Mrs. Leo
 Erskine, Albert DeWolf
 Etten, Henry C.
 Eustice, Alfred L.
 Evans, Miss Anna B.
 Evans, Mrs. David
 Evans, David J.
 Evans, Eliot H.
 Evans, Evan A.
 Ewen, William R. T.

 Fabian, Francis G.
 Fabrice, Edward H.
 Fabry, Herman
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 Faget, James E.
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 Fahrenwald, Frank A.
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 Feltman, Charles H.
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 Fergus, Robert C.
 Fernald, Robert W.
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 Fetcher, Edwin S.
 Fetzner, Wade
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 Filek, August
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 Fisher, Mrs. Edward
 Metcalf
 Fisher, Harry M.
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 Flexner, Washington
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 Florsheim, Irving S.
 Florsheim, Mrs.
 Milton S.
 Florsdorf, Mrs. G. E.
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 Folsom, Mrs. Richard S.
 Foote, Peter
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 Foreman, Mrs. E. G.
 Foreman, Edwin G., Jr.
 Foreman, Mrs. Gerhard
 Foreman, Harold E.
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 Forgan, Mrs. J. Russell
 Forgan, Robert D.
 Forman, Charles
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 Forstall, James J.
 Fortune, Miss Joanna
 Foster, Mrs. Charles K.

Foster, Volney
 Fowler, Miss Elizabeth
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 Fox, Jacob Logan
 Fox, Dr. Paul C.
 Fox, Dr. Philip
 Frank, Arthur A.
 Frank, Dr. Ira
 Frank, Mrs. Joseph K.
 Frankenstein, William B.
 Frankenthal, Dr. Lester E., Jr.
 Franklin, Mrs. George De Haven
 Frazer, Mrs. George E.
 Freedman, Dr. I. Val
 Freeman, Charles Y.
 Freer, Archibald F.
 Freiler, Abraham J.
 French, Dudley K.
 Frenier, A. B.
 Freudenthal, G. S.
 Frey, Charles Daniel
 Freyn, Henry J.
 Fridstein, Meyer
 Friedlander, Jacob
 Friedlich, Mrs. Herbert
 Friedman, Mrs. Isaac K.
 Friend, Mrs. Henry K.
 Friestedt, Arthur A.
 Frisbie, Chauncey O.
 Frost, Mrs. Charles Sumner
 Fuller, Mrs. Charles
 Fuller, Mrs. Gretta Patterson
 Fuller, Judson M.
 Furry, William S.
 Furst, Eduard A.
 Gabathuler, Miss Juanita
 Gabriel, Adam
 Gaertner, William
 Gale, G. Whittier
 Gale, Henry G.
 Gall, Charles H.
 Gall, Harry T.
 Gallagher, Mrs. John J.
 Gallup, Rockwell
 Galt, Mrs. A. T.
 Gamble, D. E.
 Gamble, James A.
 Gann, David B.
 Gansbergen, Mrs. F. H.
 Garcia, Jose
 Garden, Hugh M. G.
 Gardiner, Mrs. John L.
 Gardner, Addison L.
 Gardner, Addison L., Jr.
 Gardner, Henry A.
 Gardner, Mrs. James P.

Garrison, Dr. Lester E.
 Gately, Ralph M.
 Gates, Mrs. L. F.
 Gawne, Miss Clara V.
 Gay, Rev. A. Royal
 Gaylord, Duane W.
 Gear, H. B.
 Gehl, Dr. W. H.
 Gehrman, Felix
 Geiger, Alfred B.
 Geiling, Dr. E. M. K.
 Gentz, Miss Margaret Nina
 George, Mrs. Albert B.
 Georges, Fred W.
 Gerber, Max
 Gerding, R. W.
 Geringer, Charles M.
 Gerngross, Mrs. Leo
 Gettelman, Mrs. Sidney H.
 Getz, Mrs. James R.
 Getzoff, E. B.
 Gibbs, Dr. John Phillip
 Gibson, Dr. Stanley
 Gidwitz, Alan K.
 Gielow, Walter C.
 Gifford, Mrs. Frederick C.
 Gilbert, Miss Clara C.
 Gilchrist, Mrs. John F.
 Gilchrist, Mrs. William Albert
 Giles, Carl C.
 Giles, Mrs. Guy H.
 Gillette, Mrs. Ellen D.
 Gillson, Louis K.
 Gintner, Miss Minnie C.
 Girard, Mrs. Anna
 Glaescher, Mrs. G. W.
 Glasgow, H. A.
 Glasner, Rudolph W.
 Godehn, Paul M.
 Goedke, Charles F.
 Goehst, Mrs. John Henry
 Goes, Mrs. Arthur A.
 Golden, Dr. Isaac J. K.
 Goldenberg, Sidney D.
 Goldfine, Dr. Ascher H. C.
 Golding, Robert N.
 Goldsmith, Mitchel
 Goldstein, Nathan S.
 Goldstine, Dr. Mark T.
 Goldy, Walter I.
 Goltra, Mrs. William B.
 Goode, Mrs. Rowland T.
 Gooden, G. E.
 Goodman, Benedict K.
 Goodman, Mrs. Milton F.
 Goodman, W. J.
 Goodman, William E.

Goodwin, Clarence Norton
 Goodwin, George S.
 Gordon, Miss Bertha F.
 Gordon, Harold J.
 Gordon, Dr. Richard J.
 Gordon, Mrs. Robert D.
 Gorrell, Mrs. Warren
 Gradle, Dr. Harry S.
 Graf, Robert J.
 Graff, Oscar C.
 Graham, Douglas
 Graham, E. V.
 Graham, Miss Margaret H.
 Gramm, Mrs. Helen
 Granger, Mrs. Everett J.
 Grant, James D.
 Grant, John G.
 Graves, Howard B.
 Grawoig, Allen
 Gray, Dr. Earle
 Green, Miss Mary Pomeroy
 Green, Robert D.
 Greenburg, Dr. Ira E.
 Greene, Henry E.
 Greenebaum, James E.
 Greenebaum, M. E., Jr.
 Greenlee, Mrs. William Brooks
 Greenman, Mrs. Earl C.
 Gregory, Clifford V.
 Gregory, Mrs. Robert B.
 Gregory, Stephen S., Jr.
 Gregory, Tappan
 Gressens, Otto
 Grey, Charles F.
 Grey, Dr. Dorothy
 Griest, Mrs. Marianna L.
 Griffenhagen, Mrs. Edwin O.
 Griffith, Mrs. Carroll L.
 Griffith, E. L.
 Griffith, Mrs. William
 Griffiths, George W.
 Grimm, Walter H.
 Griswold, Harold T.
 Grizzard, James A.
 Gronkowski, Rev. C. I.
 Groot, Cornelius J.
 Groot, Lawrence A.
 Gross, Henry R.
 Grossman, Frank I.
 Grotenhuis, Mrs. William J.
 Grotowski, Dr. Leon
 Gruhn, Alvah V.
 Grulee, Lowry K.
 Grunow, Mrs. William C.
 Guenzel, Louis

Guest, Ward E.
Gundlach, Ernest T.
Gunthorp, Walter J.
Gurley, Miss Helen K.
Gwinn, William R.

Haas, Maurice
Hadley, Mrs. Edwin M.
Hagen, Mrs. Daise
Hagen, Fred J.
Hagens, Dr. Garrett J.
Hagner, Fred L.
Haight, George I.
Hair, T. R.
Hajicek, Rudolph F.
Haldeman, Walter S.
Hale, Mrs. Samuel
Hale, William B.
Hall, David W.
Hall, Edward B.
Hall, Mrs. J. B.
Hallmann, August F.
Hallmann, Herman F.
Halperin, Aaron
Hamill, Charles H.
Hamill, Mrs. Ernest A.
Hamill, Robert W.
Hamlin, Paul D.
Hamm, Fred B.
Hammerschmidt, Mrs. George F.
Hammit, Miss Frances M.
Hammond, Thomas S.
Hand, George W.
Hanley, Henry L.
Hann, J. Roberts
Hansen, Mrs. Carl
Hansen, Jacob W.
Harder, John H.
Hardie, George F.
Hardin, John H.
Harding, John Cowden
Harding, Richard T.
Hardinge, Franklin
Harms, Van Deursen
Harper, Alfred C.
Harris, Mrs. Abraham
Harris, David J.
Harris, Gordon L.
Harris, Hayden B.
Hart, Mrs. Herbert L.
Hart, Max A.
Hart, William M.
Hartmann, A. O.
Hartshorn, Kenneth L.
Hartwig, Otto J.
Hartz, W. Homer
Harvey, Hillman H.
Harvey, Richard M.
Harwood, Thomas W.
Haskell, Mrs. George E.

Haugan, Oscar H.
Havens, Samuel M.
Hay, Mrs. William Sherman
Hayes, Charles M.
Hayes, Harold C.
Hayes, Miss Mary E.
Haynie, Miss Rachel W.
Hays, Mrs. Arthur A.
Hayslett, Arthur J.
Hazlett, Dr. William H.
Healy, Vincent Jerrems
Heaney, Dr. N. Sproat
Heaton, Harry E.
Heaton, Herman C.
Heck, John
Hedberg, Henry E.
Heide, John H., Jr.
Heidke, Herman L.
Heiman, Marcus
Heine, Mrs. Albert
Heineman, Oscar
Heinzelman, Karl
Heinzen, Mrs. Carl
Hejna, Joseph F.
Heldmaier, Miss Marie
Helfrich, J. Howard
Heller, Albert
Heller, John A.
Heller, Mrs. Walter E.
Hellman, George A.
Hellyer, Walter
Hemple, Miss Anne C.
Henderson, Thomas B. G.
Henkel, Frederick W.
Henley, Dr. Eugene H.
Hennings, Mrs. Abraham J.
Henry, Huntington B.
Henry, Otto
Henschel, Edmund C.
Henshaw, Mrs. Raymond S.
Herrick, Charles E.
Herrick, Miss Louise
Herrick, Walter D.
Herron, James C.
Herron, Mrs. Ollie L.
Hershey, J. Clarence
Hertz, Mrs. Fred
Hertzberg, Lawrence
Herwig, George
Herwig, William D., Jr.
Heun, Arthur
Heverly, Earl L.
Hibbard, Mrs. Angus S.
Hibbard, Mrs. W. G.
Hicks, E. L., Jr.
Higgins, John
Higinbotham, Harlow D.
Higley, Mrs. Charles W.
Hildebrand, Eugene, Jr.

Hildebrand, Grant M.
Hill, Mrs. E. M.
Hill, Mrs. Russell D.
Hill, William E.
Hille, Dr. Hermann
Hillebrecht, Herbert E.
Hillis, Dr. David S.
Hills, Edward R.
Himrod, Mrs. Frank W.
Hind, Mrs. John Dwight
Hinkle, Ross O.
Hinman, Mrs. Estelle S.
Hinrichs, Henry, Jr.
Hinsberg, Stanley K.
Hirsch, Jacob H.
Histed, J. Roland
Hixon, Mrs. Frank P.
Hodgkinson, Mrs. W. R.
Hoffmann, Miss Caroline Dickinson
Hoffmann, Edward
Hempstead
Hogan, Robert E.
Hohman, Dr. E. H.
Hoier, William V.
Holden, Edward A.
Holland, Dr. William E.
Holliday, W. J.
Hollingsworth, R. G.
Hollis, Henry L.
Hollister, Francis H.
Holmes, George J.
Holmes, Miss Harriet F.
Holmes, Mrs. Maud G.
Holmes, William
Holmes, William N.
Holt, Miss Ellen
Homan, Miss Blossom L.
Honsik, Mrs. James M.
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Hoover, Mrs. Frank K.
Hoover, Mrs. Fred W.
Hoover, H. Earl
Hoover, Ray P.
Hope, Alfred S.
Hopkins, Farley
Hopkins, Mrs. James M.
Horan, Dennis A.
Horch, William W.
Horne, Mrs. William Dodge, Jr.
Horner, Dr. David A.
Horner, Mrs. Maurice L., Jr.
Hornung, Joseph J.
Horst, Curt A.
Horton, George T.
Horton, Hiram T.
Horton, Horace B.
Horween, Arnold
Hosbein, Louis H.
Hosmer, Philip B.

- Hottinger, Adolph
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 Howe, Clinton W.
 Howe, Mrs. Pierce Lyman
 Howe, Warren D.
 Howe, William G.
 Howell, Albert S.
 Howell, William
 Howes, Mrs. Frank W.
 Howse, Richard G.
 Hoyne, Thomas Temple
 Hoyt, Mrs. Phelps B.
 Hubbard, George W.
 Huber, Dr. Harry Lee
 Hudson, Mrs. H. Newton
 Hudson, Walter L.
 Huey, Mrs. A. S.
 Huff, Thomas D.
 Hufty, Mrs. F. P.
 Huggins, Dr. Ben H.
 Hughes, George A.
 Hughes, John E.
 Hughes, John W.
 Hulbert, Mrs. Milan H.
 Hume, John T.
 Humphrey, H. K.
 Huncke, Herbert S.
 Huncke, Oswald W.
 Hunter, Samuel M.
 Hurley, Edward N., Jr.
 Huston, Ward T.
 Huszagh, R. LeRoy
 Huszagh, Ralph D.
 Hutchinson, Foye P.
 Hutchinson, Samuel S.
 Hyatt, R. C.
 Ickes, Raymond
 Idelman, Bernard
 Ilg, Robert A.
 Inlander, Samuel
 Irons, Dr. Ernest E.
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 Isham, Henry P.
 Ives, Clifford E.
 Jackson, Allan
 Jackson, Archer L.
 Jackson, Mrs. Arthur S.
 Jackson, Miss Laura E.
 Jacobi, Miss Emily C.
 Jacobs, Hyman A.
 Jacobs, Julius
 Jacobs, Louis G.
 Jacobs, Walter H.
 Jacobs, Whipple
 Jacobson, Raphael
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 Jameson, Clarence W.
 Janusch, Fred W.
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 Jarchow, Charles C.
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 Jenkins, Mrs. John E.
 Jenkinson, Mrs. Arthur Gilbert
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 Jennings, Ode D.
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 Jerger, Wilbur Joseph
 Jetzinger, David
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 Jirka, Dr. Robert H.
 John, Dr. Findley D.
 Johnson, Alvin O.
 Johnson, Arthur L.
 Johnson, H. C.
 Johnson, Mrs. Harley Alden
 Johnson, Isaac Horton
 Johnson, Joseph M.
 Johnson, Nels E.
 Johnson, Mrs. O. W.
 Johnson, Olaf B.
 Johnson, Philip C.
 Johnston, Arthur C.
 Johnston, Edward R.
 Johnston, Mrs. Hubert McBean
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 Johnstone, George A.
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 Jones, G. Herbert
 Jones, James B.
 Jones, Dr. Margaret M.
 Jones, Melvin
 Jones, Miss Susan E.
 Jones, Warren G.
 Joseph, Mrs. Jacob G.
 Joseph, Louis L.
 Joy, Guy A.
 Joyce, Joseph
 Judson, Clay
 Juergens, H. Paul
 Julien, Victor R.
 Junkunc, Stephen
 Kaercher, A. W.
 Kahn, Gus
 Kahn, J. Kesner
 Kahn, Louis
 Kaine, James B.
 Kane, Jerome M.
 Kanter, Jerome J.
 Kaplan, Nathan D.
 Karcher, Mrs. Leonard D.
 Karpen, Michael
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 Kaspar, Otto
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 Katzin, Frank
 Kauffman, Mrs. R. K.
 Kauffmann, Alfred
 Kaufmann, Dr. Gustav L.
 Kavanagh, Clarence H.
 Kavanagh, Maurice F.
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 Keeney, Albert F.
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 Kelker, Rudolph F., Jr.
 Kellogg, John L.
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 Kempner, Harry B.
 Kempner, Stan
 Kendall, Mrs. Virginia H.
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 Kennedy, Miss Leonore
 Kennedy, Lesley
 Kennelly, Martin H.
 Kent, Dr. O. B.
 Keogh, Gordon E.
 Kern, H. A.
 Kern, Trude
 Kersey, Glen B.
 Kerwin, Edward M.
 Kesner, Jacob L.
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 Kimball, William W.
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 Kimbark, John R.
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 Kingman, Mrs. Arthur G.
 Kinsey, Frank
 Kinsey, Robert S.
 Kintzel, Richard
 Kirchheimer, Max
 Kirkland, Mrs. Weymouth
 Kitchell, Howell W.
 Kittredge, R. J.
 Kitzelman, Otto
 Klein, Arthur F.
 Klein, Henry A.

- Klein, Mrs. Samuel
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 Kleist, Mrs. Harry
 Kleppinger, William H.
 Kleutgen, Dr. Arthur C.
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 Knopf, Andrew J.
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 Knutson, George H.
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 Koch, Raymond J.
 Kochs, August
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 Kohler, Eric L.
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 Pottenger, Miss
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 Stanton, Edgar
 Stanton, Henry T.

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FIELD MUSEUM OF NATURAL HISTORY

VOLUME 12, NUMBER 3

JANUARY, 1942

PUBLICATION 515

PRINTED IN THE UNITED STATES OF AMERICA
BY FIELD MUSEUM PRESS

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CUP STAND FROM KISH

Bronze with drinking vessel of stone. The base of the stand is cast in the form of a frog with inlays of shell for eyes. From a Sumerian tomb, 3000 B.C.

Hall of Babylonian Archaeology (Hall K.)

ANNUAL REPORT OF THE DIRECTOR

1941

To the Trustees of Field Museum of Natural History:

I have the honor to present a report of the operations of the Museum for the year ending December 31, 1941.

During the past year I have been on active duty with the United States Army, serving at Sixth Corps Area Headquarters in Chicago. I desire to express my sincere appreciation to the Board of Trustees for permitting me to continue as Director of the Museum during this period. I further desire to record my gratitude to President Stanley Field, who by assuming many of the duties which normally fall to the Director has made it possible for me to carry the remaining load in the evening hours and in the week-ends at my disposal.

The activities of the past year have been colored somewhat by anticipation of the impending war, which finally came to our country on December 7. Every effort was made at the Museum to bring to a conclusion the many required tasks of maintenance and the many purchases of equipment which might be difficult to obtain due to the increasing restrictions brought about by so-called "defense priorities."

On June 30 the federal Work Projects Administration program at Field Museum was discontinued by governmental order to make available the full force of WPA assistance for other projects closely connected with the national defense efforts. The administration of Field Museum had long anticipated the discontinuance of this program, and the Director had repeatedly warned the staff to bring as many special projects to a conclusion as possible. It was desired to avoid being caught with several unfinished projects on hand and no labor available. This course of action proved to be a wise one. Temporary provision was made for a very few unfinished items of business, as it was manifestly impossible to foresee accurately the exact month when discontinuance of WPA work would occur.

During the latter part of the year plans were made for operations on a greatly reduced scale, because the current and future enormous increases in taxation are almost certain to be felt in the way of reduced income for this institution. The competition for contributions, due to the needs of many worth-while wartime projects such as United Service Organizations, the Red Cross, and others, together

with the proper desire of our citizens to purchase as large quantities as possible of government bonds for war purposes, is bound to be felt in the form of loss of income at the Museum. It seems proper, then, to plan to operate on a reduced income, maintaining as far as is possible all of the many services available to the public in order that the influence of this institution may still be felt at a time when normal educational and cultural influences are most necessary. It is hoped, however, that Members of the Museum will appreciate the problems of this institution as well as its services to the public, and will therefore continue their support to the best of their ability. It is encouraging to note that despite the increasing demands made upon the public purse, the Museum achieved a modest gain in memberships during 1941. There were 4,313 names of Members on the rolls at December 31 as compared with 4,225 on the corresponding date of the previous year.

One of the major undertakings completed during the year was the relocation and reconstruction of the Library so as to make it more easily available to the public. The opportunity was seized to install the finest type of indirect lighting available, and further, to build into the new library many of the features found to be helpful through an experience of twenty years in its former location. The space formerly occupied by the Library has been converted into a stackroom, where provision has been made in advance to take care of the expected increases in space demands due to the additional books and pamphlets which are continually being acquired. It has also been possible to provide for the binding of many years' accumulation of periodicals, and for the rebinding of many fine volumes which had suffered from years of almost constant use.

Another outstanding improvement accomplished during 1941 was the reinstallation of the splendid collection of gems and jewelry in H. N. Higinbotham Hall (Hall 31). These beautiful and valuable precious and semi-precious stones had been displayed since 1894 in the original cases which contained them at the time of their acquisition. It is historically interesting to recall further that these cases housed the basic collection at the 1893 World's Columbian Exposition in Chicago. During the intervening years tremendous improvements have been made in case-building, room construction, and lighting. The opening of the new hall late in June brought amazement to many who were quite familiar with the collections, for their great beauty had been so inadequately brought out in the former installation that a sharply striking and certainly most pleasing con-

trast was provided by the improvements now achieved. On the day of opening, a reception and tea were announced for the Members of the Museum, many of whom responded and were welcomed to the new Hall of Gems.

One of the most unusual exhibits in any museum of anthropology or natural history is that of the mummy Harwa, which was installed in the Hall of Egyptian Archaeology (Hall J) in 1941 after being seen by millions at the New York World's Fair during 1939 and 1940. This mummy came to America in 1904 and has been a part of Field Museum's collection since that time. It was lent to the General Electric X-ray Corporation for the purpose of their special exhibit, due to the fact that this institution and that company had previously co-operated in experiments to perfect the technique of X-raying material of this type. At the close of the second year of the fair in New York, the General Electric X-ray Corporation, in appreciation, graciously presented the entire exhibit to Field Museum. I desire here to express publicly the sincere thanks of this institution for such a splendid gift. The exhibit has been placed in a special chamber in Hall J. There visitors may see Harwa first in his external mummy wrappings; then, automatically, a fluoroscopic screen moves in front of the mummy and an electric current of 125,000 volts activates X-rays which penetrate to Harwa's interior and project the image of his ancient skeleton on the screen. Lead glass protects visitors from being harmed by the rays. The X-ray and mechanical equipment were especially designed and built for this particular purpose, at a cost of many thousands of dollars. General Electric engineers and technicians assisted in the work of installing it at the Museum. When visitors to the Egyptian Hall are few in number, they may themselves operate the exhibit by pushing a button. On days when there are many visitors, the cycle is repeated automatically at 40-second intervals throughout the day.

The opening in 1941 of the Hall of Fishes (Hall O) on the ground floor completes a series of three splendid halls which are devoted to marine life. The Hall of Marine Mammals (Hall N) occupies a central position and contains habitat groups of seals, sea lions, manatee, and narwhal. On the south side of this hall is the Hall of Lower Invertebrates (Hall M) which was announced in the Annual Report of the Director for the year 1939. The new Hall of Fishes, which was opened in July, is adjacent to and directly connected with the Hall of Marine Mammals. Habitat groups include one showing the fishes of the Bahama coral reefs, another showing the

rocky coast of Maine, and one of the sandy ocean floor of the Texas coast. In addition, there is an extensive systematic collection of fishes in kindred forms running from the giant whale-shark down to the tiny frog-fish from the Sargasso Sea.

Throughout this report there are cited many instances of new exhibits which have been opened to the public. It is only natural that any reader would attribute full credit to the department sponsoring each exhibit. Little thought or appreciation is given to the Division of Maintenance or the Division of Engineering through whose efforts the painstaking details of case-planning, lighting, construction, and even to a large extent the actual installation are carried out. I am pleased to call especial attention to the effectiveness, thoroughness, and spirit of co-operation with which these divisions carry on their work.

There are many persons whose names are not found in the press reports or on the labels of the Museum exhibits, who contribute valuable service without which the Museum could not continue. I acknowledge a debt of gratitude to the many men and women who perform routine jobs with skill and extreme care, and who thus contribute to the maintenance of the good name of this institution.

A development which will contribute greatly to the comfort and convenience of the public was the replacement with new facilities, at a cost approximating \$30,000, of the former distantly separated men's and women's lavatories. The new arrangement consists of a lobby, providing smoking-room and rest-room accommodations and a meeting place for both men and women, on either side of which are new lavatories with capacity double that formerly available, and fitted out with the most modern equipment. Details of this, and other construction and maintenance accomplishments, including tuck pointing of the Museum building and rebuilding of the parapet walls on the north side of the building, will be found in this Report under the heading Maintenance and Construction (page 422).

After the entrance of the United States into the war, such steps were taken throughout the building as were considered necessary to provide protection against possible new hazards from saboteurs, fire, and other eventualities.

In times such as those through which we are now living, preservation of public morale is generally conceded to be one of the most important factors toward winning the war and winning the peace to which we look forward. Field Museum and kindred institutions are performing and must continue to perform a leading function in

this respect both for men in the armed services of the nation and for civilians. The value of the Museum as a haven for mental and spiritual rehabilitation is recognized by Army and Navy authorities, and groups of soldiers, sailors, marines, and coast guardsmen, when on leave or furlough, are constantly coming to the Museum. Admission to the Museum is free of charge on all days to men in military uniform. The attendance during 1941—1,258,147 persons—indicates that the Museum is serving its role as a morale sustainer and morale builder. Although this attendance was somewhat under that of the preceding year, it compares favorably with the average of other recent years. Slight fluctuations from the general level established over a period of years are naturally to be expected, and can hardly be considered as abnormal. Further illustration of the tendency toward unaccountable fluctuations is afforded by the number of paid admissions which went in the opposite direction, increasing to 86,535 as against 80,888 in 1940.

In addition to those actually visiting the Museum itself, the institution's benefits were extended, as in past years, to many additional hundreds of thousands outside the Museum, through traveling exhibits circulated by the N. W. Harris Public School Extension, and through the extension lectures provided in the schools by the James Nelson and Anna Louise Raymond Foundation for Public School and Children's Lectures. Further, as has been emphasized in past Reports, scientific information originating in Field Museum reaches probably millions of other people in this country and elsewhere through such channels as thousands of newspapers and periodicals, the institution's own publications, and the radio.

Programs such as the Museum's spring and autumn courses of lectures for adults, the spring, summer and autumn series of moving picture programs for children presented by the Raymond Foundation, the daily guide-lecture tours, the Sunday afternoon Layman Lectures presented by Mr. Paul G. Dallwig, and other special events, were responsible for bringing more than 110,000 persons to the Museum. Special groups included the annual delegations of farm boys and girls sent to the Museum by the National Congress of Four-H Clubs, the adult graduating class of the Chicago Public Schools, whose commencement exercises were held in the James Simpson Theatre, the American Society of Mammalogists, which held its annual convention at the Museum, the American Oriental Society, the Hoosier Salon Patrons Association, and the Chicago Chapter of the American Gem Society.

Due to the abnormal conditions existing in the world, and their effect upon the yield of such securities as are held in the endowment funds of the Museum, this institution is more than usually dependent upon the generous contributions of its benefactors. Acknowledgment is hereby made to those who have contributed to the Museum's funds, and also to those who have given material for use in the exhibits, study collections, and Library.

Mr. Marshall Field, member of the Board of Trustees, again, as for many years past, was the Museum's outstanding individual supporter, his contributions during 1941 amounting to the sum of \$282,815.24, or more than one-third of the Museum's entire expenditures for the year.

The special fund maintained by Mr. Stanley Field, President of the Museum, for designated purposes (and purposes to be designated) was augmented during 1941 by his gifts totaling \$29,003.

The operations of the James Nelson and Anna Louise Raymond Foundation for Public School and Children's Lectures were supported, as they have been ever since 1925, by the Founder, Mrs. James Nelson Raymond, who during 1941 contributed \$6,000 for this purpose.

Mrs. Richard T. Crane, Jr., presented twenty-three gems, valued at \$25,000, for addition to the collections in the new H. N. Higinbotham Hall of Gems and Jewels. This hall is named in honor of Mrs. Crane's father, who provided the original and major part of the collection in 1894. He served as a Trustee in the period from 1894 until his death in 1919, and was the second President of the Museum (1898-1908).

Another notable contribution for Higinbotham Hall is a beautiful stained glass window by Tiffany, valued at \$1,000, and presented by Mr. F. G. James, of Cleveland, Ohio. The installation of this window in the hall adds greatly to the pleasing *décor* of the room. In recognition of this gift, the Trustees elected Mr. James to membership as a Contributor (Mrs. Crane's name already had been on the list of Contributors for some years past as a result of other gifts she had made at various times).

Gifts from Mr. Leon Mandel amounted to \$1,747.76. Also, at his own expense, Mr. Mandel sponsored an expedition to the Galapagos Islands.

Prior to his much regretted death, on August 26, 1941, Mr. Charles H. Schweppe, for years a generous contributor to the

Museum, made a further gift of \$2,000 for an exhibition project toward which he had given \$2,500 in the preceding year.

Dr. Louis B. Bishop, of Pasadena, California, was elected a Contributor following the receipt of his gift of 1,180 specimens of birds (valued at more than \$2,213) for addition to the Bishop Collection of Birds, which he founded. Since acquisition by the Museum in 1939 of the major portion of its more than 50,000 specimens, the Bishop Collection has constituted one of the principal resources of the Division of Ornithology.

The continued purchase of specimens of birds of prey for addition to the collection begun by the late Leslie Wheeler, former Trustee of the Museum, was assured by Mrs. Clarence C. Prentice, who again made a contribution of \$1,000 to the Leslie Wheeler Fund.

From Dr. Henry J. Bruman, of State College, Pennsylvania, the Museum received a valuable collection of ethnological specimens representing the Huichol Indians of Mexico.

Mr. Boardman Conover, a Trustee of the Museum, made gifts totaling \$1,146, partly for use toward the expenses of an expedition to Peru, and the balance for other purposes.

The death of Mrs. Elizabeth Ayer Johnson on March 13, 1941, released to the Museum the Edward E. Ayer Lecture Fund, now amounting to \$104,077.75 (in which Mrs. Johnson had had a life interest).

The sum of \$13,163.78 was received from the Estate of Martin A. Ryerson as an additional accrual to the legacy he left the Museum, earlier proceeds of which have been reported in previous years.

From the estate of the late William Benson Storey the Museum received payment in 1941 of the \$8,000 legacy designated for this institution in Mr. Storey's will. The bequest of this sum was indicated in the 1940 Annual Report. In recognition of his generosity, the Trustees honored Mr. Storey by posthumous election to membership as a Contributor to the Museum.

Among others whose gifts in money or materials were notable are Mrs. Sara Carroll Field (Mrs. Stanley Field), Mrs. John Stuart Coonley, Mr. Paul C. Standley, Dr. Julian A. Steyermark, and Dr. Paul S. Martin.

Details of the many gifts of material received for the collections of the Museum will be found in the departmental sections of this Report, and a complete list classified as to departments, and with names of donors alphabetically arranged, begins on page 434.

The tax levied by the Chicago Park District to aid in the support of Field Museum and other museums, under an act of the State Legislature, yielded \$129,498.70 to this institution in 1941, as compared with \$58,130.33 in the preceding year.

Beginning October 1, it became necessary for Field Museum to charge a federal admission tax of three cents in addition to the regular twenty-five cents for adults on Mondays, Tuesdays, Wednesdays, and Fridays. This was caused by Congressional enactment of the Revenue Act of 1941, which removed the exemption from tax on admission charges which formerly applied to religious, educational, and charitable organizations. The free days, Thursdays, Saturdays, and Sundays, are unaffected by the provisions of the new legislation. The Museum will continue to admit school children free; also, students and faculty members of recognized educational institutions will be admitted free on all days upon presentation of proper credentials, although the Museum itself will be required to pay the three-cent tax on such admissions, and on all children over twelve years of age on the days when charge is made to other persons. Likewise, all Members of the Museum will retain the privilege of free admission for themselves, their families, and their guests. Admission will continue to be free on all days to members of the armed forces of the United States, in uniform, whom the law specifically exempts from the tax.

On May 2, 1941, Field Museum celebrated the twentieth anniversary of its occupancy of the present building. Since this monumental structure was opened on May 2, 1921, more than 25,000,000 men, women, and children have entered the world of natural science through its portals; during some twenty-five years when the Museum was located in its original home in Jackson Park an additional 5,800,000 visitors had been counted, bringing to approximately 31,000,000 the number served during the existence of the institution. As recalled in a special article appearing in the May, 1941, issue of *Field Museum News*, the task of moving the Museum's exhibits and other collections to the new building in 1921 was a gigantic one—one of the greatest operations of its kind ever undertaken—and it was accomplished with negligible loss and damage. The *News* article points out further that "within the twenty years of occupancy of this building, advances and improvements have been so rapid, and so constant, that today the Museum is scarcely recognizable as the same institution. Many of the exhibits . . . have either been changed and improved, or replaced with better material, while the

additions of new material have perhaps doubled both the exhibits and the research collections. . . . In Jackson Park there were few habitat groups . . . today hall after hall presents extensive series of this type. . . . Great improvements have been made in labeling . . . in lighting. . . . Other Museum activities have kept pace during these twenty years with the development in exhibition techniques. The educational work of . . . the Harris Extension and the Raymond Foundation . . . has grown in scope, importance, and in numbers of school children and teachers reached. . . . Twenty years have seen an amazing growth in . . . the Library . . . in the publications of the Museum . . . mechanical equipment. . . . What has happened in twenty years cannot be covered in the available space. The important thing is that the Museum has kept vigorously alive and constantly growing. The move to a new location and building was only one of many forward steps that had to be taken to provide for its continuing growth and expansion."

The Board of Trustees held its Annual Meeting on January 20, at which time Mr. Stanley Field was re-elected to serve his thirty-third consecutive year in the office of President. All other officers who had served the Museum in the preceding year were re-elected. In October, Mr. Albert W. Harris, Third Vice-President, found it necessary for personal reasons to resign from that office and from his Trusteeship. The vacancy thus created on the Board was filled in December with the election of Mr. Howard W. Fenton as a Trustee. The election of a new Third Vice-President was deferred for action at the next Annual Meeting, to be held in January, 1942.

A few new appointments to the staff, and other changes in personnel, were made during the year:

Mr. Orr Goodson, a capable business executive, was appointed Assistant to the Director.

Mr. Donald Collier, who has done notable work in American archaeology, was appointed Assistant Curator of South American Ethnology and Archaeology, a new post created by new needs; and consequently the title of Dr. Alexander Spoehr was changed from Assistant Curator of American Ethnology and Archaeology to Assistant Curator of North American Ethnology and Archaeology, with corresponding limitation of his field to the northern continent. The growing importance of inter-American relations justifies an increase in the emphasis on this division of the Department of Anthropology. Prospects toward the end of the year were that

Dr. Spoehr would go on leave for the duration of the war in order to enter the service of the United States Army, but fortunately Dr. Paul S. Martin, Chief Curator of the Department, is also a specialist in American ethnology and archaeology. Mrs. Alexander (Anne Harding) Spoehr, an artist, was given an appointment for two years on the staff of the Department of Anthropology to execute a series of paintings for new exhibits to be installed in the Hall of North American Archaeology (Hall B); and Mr. Alfred Lee Rowell was appointed as Dioramist to prepare a series of miniature dioramas for the same hall.

Mr. J. Eric Thompson, of the staff of the Division of Historical Research at the Carnegie Institution of Washington, D.C., was given an honorary appointment on the staff of Field Museum, as Research Associate in Middle American Archaeology. Mr. Thompson, well known as an expert on Maya archaeology and ethnology, was for a number of years Assistant Curator of Central and South American Archaeology at Field Museum.

Miss Elizabeth Best, formerly a volunteer worker in the Department of Zoology, was appointed as a guide-lecturer on the staff of the James Nelson and Anna Louise Raymond Foundation for Public School and Children's Lectures.

Mr. Carl F. Gronemann, the Museum's Illustrator since 1917, was retired June 30 on pension, due to ill health; subsequently he died, on November 4. Mr. John J. Janecek, his assistant, was appointed Illustrator.

Mr. Henry S. Dybas was given a temporary appointment as Assistant in Entomology. Mr. Joe B. Krstolich was appointed Artist-Preparator in the Department of Zoology.

A few appointments, some temporary for specific tasks and periods of time, some permanent for routine positions such as printers, clerical assistants, preparators, guards, etc., were made during the year. Some of these were selected from the most capable of the workers assigned to the Museum by the Work Projects Administration, following the termination of the WPA project on June 30.

Dr. Henry Field, Curator of Physical Anthropology, resigned to accept a special assignment in the Library of Congress, Washington, D.C. Mr. Henry Herpers, Assistant Curator of Geology, also resigned.

As was to be expected under existing conditions, a number of the younger men employed by the Museum have been inducted into

various branches of military service; also some others who had retained their connections with the reserve corps of the Army and Navy have gone into active service. Prospects are that more men will likewise be called from time to time during the coming year. At the end of 1941, Field Museum's honor roll of men in the service of their country, including two members of the Board of Trustees, was as follows:

Theodore Roosevelt, Trustee—Brigadier-General, U. S. Army

Joseph Nash Field, Trustee—Lieutenant (J. G.), U. S. Navy

Clifford C. Gregg, Director—Major, U. S. Army

Melvin A. Traylor, Jr., Associate, Birds—Private, U. S. Marine Corps

Patrick T. McEnery, Guard—Master-at-arms, U. S. Navy

John Syckowski, Guard—Chief Commissary Steward, U. S. Navy

George Jahrand, Guard—Chief Water Tender, U. S. Navy

M. C. Darnall, Jr., Guard—Candidates' Class, U. S. Marine Corps Reserve (Officers' Training Course)

James C. McIntyre, Guard—Private, U. S. Army, Coast Artillery

Others who had been notified that their calls to service would come in the first few weeks of 1942, and had arranged their affairs accordingly, were: Mr. Lester Armour, a Trustee, who was about to resume active service under his reserve commission as a Lieutenant-Commander in the United States Navy; Dr. John Rinaldo, Associate in Southwestern Archaeology, who served several months as a private in the Army during 1941 and had been honorably discharged, but was subject to recall following the United States' declaration of war; Dr. Alexander Spoehr, whose imminent call to service as an Army private has already been mentioned; Mr. Clyde James Nash, of the Museum guard force, a naval reserve man about to be recalled to service as a Chief Gunner's Mate, and Mr. Bert E. Grove, guide-lecturer on the Raymond Foundation staff, who had enrolled with the American Field Service for ambulance duty in north Africa, and at the end of the year was awaiting his sailing orders.

Also serving the nation, although in a civilian capacity, is Mr. Bryant Mather, Assistant Curator of Mineralogy, who was granted a leave of absence to accept an emergency appointment in a laboratory at West Point, to work for the Corps of Engineers of the United States Army.

Mr. Herbert Weeks, a preparator in the laboratories of the Department of Anthropology since 1918, died on May 13. A skillful

artisan, he was responsible for the installation of many cases. His final, and one of his finest accomplishments, was the preparation of the Department of Anthropology's section of H. N. Higinbotham Hall of Gems and Jewels, which was opened shortly after his death. Others who died during 1941 were Mr. Gronemann (mentioned elsewhere); Mr. Axel Danielson, a carpenter; Mr. Bernhard Auchter, assistant collotyper; Mr. Thomas Mason, and Mr. A. J. Thompson, former maintenance workers who had been retired on pensions, and Mr. Henry F. McNeill, a janitor. Under the Museum's group insurance policy \$2,000 was paid to the widow of Mr. Weeks, \$1,000 to the widow of Mr. Gronemann, \$2,500 to the widow of Mr. Danielson, \$1,000 to the nephew of Mr. Mason, \$1,000 to the son and two daughters of Mr. Thompson, and \$1,500 to the widow of Mr. McNeill.

The services of faithful and hard-working volunteers assisted the Museum again, as in past years, in the advancement of its research program, and also in the carrying on of various routine tasks which would overtax the members of the regular paid staff, all of whom have full burdens of duty. In the List of the Staff at the beginning of this Report will be found the names of some of these volunteer workers—they bear the distinguishing titles of "Research Associate" and "Associate" to set them apart from listings of salaried workers; and one, Mr. Paul G. Dallwig, who also serves without compensation, is designated as "The Layman Lecturer." For their services, grateful acknowledgment is made to all who are so listed, and also to the following additional volunteers: Mrs. Rose Miller, Miss Marjorie Kelly, Mr. Millard Rogers, Miss Jane Darrow, and Miss Florence Parks Rucker, who performed various tasks in the Department of Anthropology; Mr. Donald Richards, Mr. Lawrence J. King, Dr. Verne O. Graham, Mrs. Cloyd B. Stifler, Mr. Frank Dunkel, and Miss Jeanne Paul, who assisted in the Department of Botany; Mr. Harold Hanson, Miss Peggy Collins, Dr. Walter Segall, Mr. David Owens, Mr. William J. Beecher, and Mr. Robert Haas, who worked in the Department of Zoology, and Mr. Clarence L. Brown who served as a volunteer lecturer on the staff of the James Nelson and Anna Louise Raymond Foundation for Public School and Children's Lectures.

The Museum acknowledges a great advancement in many branches of its work as a result of the efforts of the many workers assigned to it by the federal Work Projects Administration, whose project at this institution was discontinued on June 30. The workers

assigned to the Museum by WPA, and by earlier federal and state agencies created to cope with the unemployment problem and later absorbed into WPA, had been serving Field Museum since 1933, and at times the forces assigned to this institution numbered well over 200 persons. Most of these men and women proved to be willing and conscientious workers, and many had native talents and special skills which proved adaptable to various technical phases of museum work. A few were so satisfactory that, when their WPA assignments terminated, the Museum engaged them to continue as regular employees, some on a temporary, and a very few on a permanent basis.

As has been the case for several years past, but for even more emphatic reasons this year due to the ever-widening expanse of the second World War, it was necessary to confine Museum expeditions to the western hemisphere. Although satisfactory progress in the Museum's research program cannot be made without expeditions, it became apparent by the end of the year, especially after the entry of our own country into the war, that explorational activities of this type probably must be still more severely curtailed for the duration of the war, and eventually may cease entirely, even in the Latin-American countries.

Outstanding among the expeditions of 1941 were the Tenth Field Museum Archaeological Expedition to the Southwest, and the Leon Mandel Galapagos Expedition. The Southwest expedition, directed, as were its nine predecessors, by Dr. Paul S. Martin, Chief Curator of Anthropology, this year worked on a site of ancient Mogollon culture in western central New Mexico. Its findings and collections, in the assemblage of which Dr. Martin was assisted by a large staff, are especially important in the broadening of knowledge of American archaeology, and are the subject of further publications which Dr. Martin has in preparation. The Galapagos Expedition, led by Mr. Leon Mandel (his fifth contribution of this type to the Museum) made a large collection of fishes, reptiles, birds and mammals. The scientific staff was headed by Dr. Wilfred H. Osgood, Curator Emeritus of Zoology, and included Mr. Rudyerd Boulton, Curator of Birds; Mr. Loren P. Woods, Assistant Curator of Fishes; Mr. Melvin A. Traylor, Jr., Associate in Ornithology; Staff Taxidermist Leon L. Walters, and Mr. Ronald Lambert as assistant taxidermist. In the departmental sections of this Report (beginning on page 362) will be found detailed accounts of these and a number of other expeditions conducted during the year.

The Book Shop of Field Museum had its most successful year since its establishment in 1938, despite increases affecting various costs entering into its operation. There was a far greater volume of sales both over the counter to visitors in the Museum, and in the fulfillment of mail orders resulting largely from advertising in *Field Museum News*, and the distribution several times during the year of lists of books notable for their seasonal interest. The stock of books and other merchandise (such as book-ends, accurate models of animals, etc.) was maintained on a larger and more varied scale than hitherto. Public confidence was sustained by the continued policy of offering only such books, whether for adults or children, as bore the endorsement of qualified members of the Museum's scientific staff to whom they were submitted for approval.

The School of the Art Institute of Chicago continued to send certain classes to Field Museum to use natural history exhibits as inspirational material for painting and drawing, under the co-operative arrangements which have existed between the two institutions for many years. Field Museum was of particular value to classes concerned with problems arising in the study of composition and research, pattern design, and sketching. For students in such courses as the history of art, the rich collections of art material by primitive and ancient peoples in the Department of Anthropology were of notable value. Instructors in the art school's Saturday Junior Department brought classes of children to Field Museum as a part of their regular curriculum.

In July, Field Museum presented part of its collection of facsimiles of Irish antiquities, formerly exhibited in the Department of Anthropology, to the University of Chicago, and part to Father Flanagan's Boys' Town in Nebraska. A formal presentation of the University's portion was made by President Stanley Field to Dr. Ulrich A. Middeldorf, Chairman of the University's Department of Art. The collection did not fit properly within the scope of Field Museum, but at the University the gold-embossed reproductions, created by Irish craftsmen and representing the major antiquities of Ireland, will be made available to scholars in the fields of Irish history, art, and literature. The gift was arranged through the Director and Dr. Tom Peete Cross, Professor of English and Comparative Literature at the University, who is an authority on ancient Irish culture.

Field Museum presented to Chicago's Museum of Science and Industry the models of an Illinois brick yard and of a cement plant

which formerly were exhibited in the Department of Geology. These exhibits, because of their industrial aspects, seem to fit more closely within the scope of the Jackson Park museum than that of this institution.

For the second time, Field Museum participated in the annual Rotary Club Exposition, held in April at the Hotel Sherman. In recognition of the great public interest in techniques and "behind-the-scenes" activities, demonstrations of museum procedures constituted the essential part of the display. The booth was manned by Mr. W. E. Eigsti, Staff Taxidermist, who mounted specimens for a small-mammal exhibit, and Mr. James H. Quinn, Chief Preparator in Paleontology, who prepared specimens of fossil ungulates. Planning and supervision of the exhibit was by Mr. John R. Millar, Curator of the N. W. Harris Public School Extension.

In accordance with the Museum's policy of co-operating with other worthy civic enterprises, special lecture tours were given in certain of the exhibition halls on Pan American Day, April 14, sponsored by the Pan American Council. Miss Elizabeth Hambleton of the Raymond Foundation staff lectured on "Story of the People of Latin America," and Mr. Clarence L. Brown, Raymond Foundation volunteer, on "Commercial Products of Latin America."

Much favorable comment resulted from Field Museum's representation in the Exhibit of Indian Art of the United States held from January to April at the Museum of Modern Art in New York. Displayed, together with material from other institutions in all parts of the country, were especially selected examples of the finest types of Indian arts and crafts. The loan of this material from the collections of the Department of Anthropology was made at the urgent request of the United States Department of the Interior, which particularly desired to make the New York exhibit all-inclusive. It should be noted that in consenting to make the loan the Trustees were deviating from an established Field Museum policy of many years' standing.

A notable addition to the service of the N. W. Harris Public School Extension was made by the placing of ten hospital schools on the list of educational institutions receiving the benefits of traveling exhibition cases. These hospital schools are branches of regular or special public schools, and it is their function to provide instruction for children who, through misfortune, must undergo long hospitalization for the treatment of various non-infectious maladies such as rheumatic heart, chorea, or crippling deformities of various

kinds. To adapt the Harris Extension cases to hospital conditions, special tubular metal stands with large free-rolling casters were made. These support the usual loan of two school cases at bedside or wheel-chair height, and the cases can be moved easily.

A notable accession for the Division of Entomology was made in the purchase of the Ballou collection of hister beetles, containing some 15,000 specimens accumulated over a period of twenty years by Mr. Charles A. Ballou, Jr., former New York publisher. This is the most extensive collection of hister beetles in the Americas, and includes approximately one-half of all the known species of the world, as well as many undescribed ones. Acquisition of this collection, made possible by the Emily Crane Chadbourne Fund, provides excellent opportunity for extensive systematic research.

The book, *Birds of El Salvador*, published by Field Museum in its Zoological Series, won for its authors, Mr. Adrian van Rossem, of the University of California at Los Angeles, and the late Donald S. Dickey, the William Brewster Medal of the American Ornithologists' Union.

The discovery in Guatemala of a showy and stately spider-lily of a species new to science—a flower that gives great promise for cultivation in conservatories and gardens of the United States—was reported during 1941 by Dr. Julian A. Steyermark, Assistant Curator of the Herbarium. He found the plant during his expedition in 1939–40, but needed until 1941 to confirm his theory that it was a new species. This was accomplished in November when bulbs which Dr. Steyermark had brought back grew to the flowering stage at the Garfield Park Conservatory. Dr. Steyermark has prepared a technical description for publication.

Various honors were bestowed upon some of the members of the Museum staff during the year:

The University of Chicago conferred the degree of Doctor of Philosophy upon Curator Sharat K. Roy (Geology). The degree is based partly upon Dr. Roy's research and publication in connection with geological and paleontological problems in Baffin Land, where he conducted investigations some years ago as a member of the Rawson-MacMillan Subarctic Expedition of Field Museum.

Columbia University, New York, conferred the degree of Doctor of Philosophy on Curator C. Martin Wilbur (Chinese Archaeology and Ethnology). This degree represents a recognition of Dr. Wilbur's exhaustive research and dissertation on the subject of slavery in China during part of the Han period.

Field Museum itself honored its Curator Emeritus of Zoology, Dr. Wilfred Hudson Osgood, one of America's most eminent biological scientists, by the publication of a testimonial volume of some 400 pages under the title *Papers on Mammalogy*. An especially bound copy of the book was presented to Dr. Osgood by President Stanley Field on December 8, which was Dr. Osgood's sixty-sixth birthday. Official publication, and the beginning of international distribution of the volume to scientific institutions and scientists, occurred on the same date. The book opens with two dedicatory articles, one by President Field and one by the Director, in which fitting tribute is paid to Dr. Osgood as a scientist and as a man. In the pages that follow are eleven scientific articles by mammalogists on the staff of Field Museum and by colleagues of Dr. Osgood's on the staffs of other institutions both in this country and abroad.

Mr. Karl P. Schmidt, who succeeded Dr. Osgood as Chief Curator of the Department of Zoology at the beginning of 1941, was honored by the American Association for the Advancement of Science which asked him to present a paper in an important symposium of leading scientists on *The Training of a Biologist*. Mr. Schmidt acted as representative of the group which includes America's field naturalists and systematic zoologists.

The Director of the Museum was honored by election as a Fellow of the American Association for the Advancement of Science.

Mr. Bryant Mather, Assistant Curator of Mineralogy, was elected Vice-Chairman of the Marquette Geologists' Association, and was appointed Technical Counselor to the Chicago Chapter of the American Gem Society.

Dr. Julian A. Steyermark, Assistant Curator of the Herbarium, was appointed to the Board of Directors of the Midwest Horticultural Society.

Mrs. Leota G. Thomas, of the Raymond Foundation lecture staff, fulfilled a request to teach an Indiana University Extension course. She also took a leading part in organizational and other activities of the Museum-School Relations Committee of the Progressive Education Association.

At the invitation of the Ministry of Agriculture of the Venezuelan government, Mr. Llewelyn Williams for the second time accepted an appointment to conduct official botanical surveys in that country, and for this purpose was granted leave of absence from his post as Curator of Economic Botany at Field Museum. He will remain in Venezuela until well into 1942, and will collect

material for the Museum in addition to his duties for the government of that country.

Mr. Alfred C. Weed, Curator of Fishes, consented to accept an assignment from an editorial board of co-operating American ichthyologists to review the mullets of the North Atlantic region. This material is to be incorporated into a general account of Atlantic coast marine fishes of which publication is planned.

Mr. Rudyerd Boulton, Curator of Birds, was re-elected Treasurer and Business Manager of the American Ornithologists' Union, a position which he has held since 1938.

Mr. Bert E. Grove, staff lecturer of the Raymond Foundation, organized and conducted a group of natural science clubs for both children and adults, at the request of the Trailside Museum of River Forest, Illinois. Miss Elizabeth Best, also a Raymond Foundation lecturer, demonstrated methods of dissection and taxidermy during the laboratory course given to the members of these clubs.

Mr. Henry W. Nichols, Chief Curator of the Department of Geology, was appointed to the Committee on Legal Ownership of Meteorites, and the Committee on Terminology, of the Society for Research on Meteorites.

In accordance with the custom of past years, many members of the Museum staff were active, both in Chicago and outside the city, in special studies at other institutions, on local field trips, in attending meetings of various learned societies, and in filling engagements as guest speakers for organizations of many types or on programs presented over the radio. A number of the lecture engagements were received from universities and colleges. Prominent among those who figured as lecturers and radio speakers were Dr. Julian A. Steyermark, Assistant Curator of the Herbarium; Mr. Rudyerd Boulton, Curator of Birds; Mr. Bryant Mather, Assistant Curator of Mineralogy; Mr. John W. Moyer, Staff Taxidermist; Mr. Emmet R. Blake, Assistant Curator of Birds; Major Clifford C. Gregg, Director; Dr. Wilfrid D. Hambly, Curator of African Ethnology; Dr. Fritz Haas, Curator of Lower Invertebrates; Mr. Karl P. Schmidt, Chief Curator of Zoology; Dr. Paul S. Martin, Chief Curator of Anthropology; Dr. Wilfred H. Osgood, Curator Emeritus of Zoology; Mr. C. J. Albrecht, Staff Taxidermist; Mr. Llewelyn Williams, Curator of Economic Botany; Dr. Alexander Spoehr, Assistant Curator of North American Ethnology and Archaeology; Mr. Loren P. Woods, Assistant Curator of Fishes, and

Dr. C. Martin Wilbur, Curator of Chinese Archaeology and Ethnology.

Mr. Rupert L. Wenzel, Assistant Curator of Insects, made an eastern trip in the course of which he conducted research based upon type specimens of parasitic bat flies and histerid beetles in the collections of principal museums in New York, Philadelphia, Washington, Pittsburgh, and Boston. Mr. Elmer S. Riggs, Curator of Paleontology, visited the Carnegie Museum in Pittsburgh to arrange exchanges of fossils. Mr. Karl P. Schmidt, Chief Curator of Zoology, read a scientific paper before the Texas Herpetological Society. Mrs. Leota G. Thomas, of the Raymond Foundation staff, attended the annual meeting of the American Association of Museums, held at Columbus, Ohio. Mr. Clifford H. Pope, Curator of Reptiles, conducted zoological field research in northwestern Illinois, and in the same general region similar botanical work was conducted by Mr. Paul C. Standley and Dr. Julian A. Steyermark, Curator and Assistant Curator respectively of the Herbarium. Dr. Fritz Haas, Curator of Lower Invertebrates, presented a paper before the American Malacological Union, meeting at Thomaston, Maine. Mr. Rudyerd Boulton, Curator of Birds, presented a paper at the Denver meeting of the American Ornithologists' Union. Mr. J. Francis Macbride, Associate Curator of the Herbarium, made a study of the Andean collections in the herbarium of the University of California. Mr. James H. Quinn, Chief Preparator in Paleontology, made a survey of the laboratories in principal museums of the east, studying their preparation and installation methods. Dr. C. Martin Wilbur, Curator of Chinese Archaeology and Ethnology, read a paper before the American Historical Association which held its annual meeting in Chicago.

Members of Field Museum's staff took a leading part at an all-day conference of officials of schools and museums held April 19 at the Museum of Science and Industry. General problems relating to the educational use of all Chicago's museums were discussed. The meeting was sponsored by the Chicago Museum-School Relations Committee, a voluntary organization composed of representatives of the several museums and principal school systems of the city and adjacent areas, whose aim is to effect greater co-operation. Field Museum's staff members who participated include the Director; Mr. John R. Millar, Curator of the Harris Extension; Miss Miriam Wood, Chief of the Raymond Foundation; and Mrs. Leota G. Thomas and Miss Elizabeth Hambleton of the Raymond Foundation staff.

As is the case every year, from all over the United States and from foreign countries as well, many persons distinguished in the sciences, and also in other walks of life, took occasion to visit Field Museum when in Chicago for various purposes. Among the most notable scientists were Professor Erik Asplund, of the Botany Department of the Natural History Museum of Stockholm, Sweden; the members of the American Society of Mammalogists, and the members of the American Oriental Society. On March 31, the Hon. Henry A. Wallace, Vice-President of the United States, visited the Museum. Many other notable personalities, too numerous to list here, were also guests of the Museum at various times.

An increase in the business of the Museum Cafeteria is noted, meals having been served to 100,740 persons in 1941 as compared to 97,225 in 1940. There was also some increase in the use of the rooms provided for children and others who bring lunches to the Museum, 76,243 persons having taken advantage of these facilities in 1941 as against 75,738 in the preceding year. The Cafeteria management operates a special lunch counter to supply those using the children's rooms with supplementary provisions such as hot beverages, soft drinks, sandwiches, ice cream, etc., but the tables and benches in these rooms are available to all visitors whether they make such purchases or not.

The activities of the various Departments and Divisions of the Museum are described in detail in the pages that follow:

DEPARTMENT OF ANTHROPOLOGY

EXPEDITIONS AND RESEARCH

The Field Museum Archaeological Expedition to the Southwest, under the leadership of Dr. Paul S. Martin, Chief Curator of Anthropology, spent three and one-half months in New Mexico, continuing excavations at the SU site. Permits for work on this site in the Apache National Forest were obtained from the Division of Forestry, United States Department of Agriculture.

The SU site was first briefly explored in 1939 by a Field Museum expedition, and a report was issued in 1940 under the title *The SU Site—Excavations at a Mogollon Village, Western New Mexico*. Details of this work were given also in the Annual Report of the Director for 1939.

Dr. Martin's assistant for the 1941 expedition was Mr. Robert J. Braidwood, who directed excavations. Mr. Braidwood, an instructor in the Department of Anthropology at the University of Chicago,



PIT HOUSE NFAR RESERVE NEW MEXICO

Excavated by Field Museum Archaeological Expedition to the Southwest 1941

This house was occupied at or before A.D. 500

was a member of the Syrian Expedition of the Oriental Institute. Also assisting in various capacities were Mr. Robert Yule, photographer and cartographer; Miss Jane Darrow, in charge of washing and cataloguing stone and bone implements and pottery; Miss Margaret Ross, in charge of cleaning and preserving skeletal materials, and Mr. Brigham Arnold, of the University of Arizona, who conducted the archaeological survey. Other members of the expedition were Messrs. Clifton Kroeber, Charles De Peso, and Jules Williams, and Mrs. Stanley Dickson.

For their helpful, friendly, and courteous co-operation, the Museum is indebted to Mr. R. B. Ewing, Supervisor of the Apache National Forest, and his associates, Mr. Robert I. Stewart, Assistant Forest Supervisor, and Mr. Benton S. Rogers, District Forest Ranger.

Recapitulating briefly the findings of the 1939 expedition: The SU site was occupied by Indians of the Mogollon culture—a culture discovered only a few years ago. Previously, archaeologists had believed that one civilization produced all the various types of pottery, houses, and tools that were dug up in the Southwest. We now know that this was incorrect. Within the last few years, archaeologists have produced evidence that there were two other Southwest civilizations—Pueblo and Hohokam. The most recently discovered civilization is the Mogollon, toward the knowledge of which Field Museum's Expeditions of 1939 and 1941 have greatly contributed.

During the course of the 1941 excavations, eight more houses were discovered and cleared of debris, and approximately 600 stone and bone tools and 19,000 potsherds were recovered. The Mogollon tools are of a crude early type, unlike those ordinarily associated with Indians. In fact, the stone tools such as choppers, hammer-stones, polishing stones, and scrapers, are so primitive that one would ordinarily pass them by without recognizing that they had ever been used by man for any purpose whatsoever; but inasmuch as many such stones were found in all the houses, the investigators were led to note that they fell into distinct patterns and types, and therefore could not be natural, unused stones.

It is of great interest to note that no grooved axes of any kind were found. The absence of these important tools makes a mystery of the means employed by the ancient Mogollon Indians to fell their trees. We know that they used trees at least six inches in diameter for roofing their houses.

The potsherds represent three kinds of undecorated pottery: Alma Plain, a polished brown ware; Alma Rough, an unpolished,

rough, brown pottery; and San Francisco Red, a polished, slipped, undecorated ware.

The people who inhabited the SU village lived mostly in pit houses—large pits sunk into the earth, and then roofed over with logs, twigs, and sod; but some of these Indians built and occupied surface houses with floors flush with ground level. The walls of the latter consisted of upright poles set eight to fourteen inches apart. Between these poles mud and small sticks were packed, thus forming a good, tight wall. This kind of construction is called "wattle-and-daub," and contrasts with subterranean houses.

Fire pits were not found in any of the houses. It is believed, therefore, that these Indians rarely used fire inside the house for cooking, warmth, or light. Extensive digging likewise failed to reveal any fire pits outside the houses.

Most of the pit houses were equipped with entrance-tunnels, sometimes large, sometimes small. These always face east—why is not known, but probably the orientation was for religious reasons.

The dead were always buried in pits either outside the houses or dug into the house floors. The corpses were wrapped in a doubled-up position. Generally burials were not placed in house pits until after the house had been abandoned. Offerings to the dead were rare. The only objects found with skeletons were tobacco-pipes and sometimes shell bracelets and necklaces. Unbroken pottery was never found.

Very few arrowheads or spearheads were found. Food-grinding tools were brought to light in great abundance from all houses. It is assumed, therefore, that the Mogollon Indians of the SU village lived mostly on berries, roots, herbs, and grasses, and depended little on hunting or agriculture. The people apparently were mostly seed-gatherers rather than farmers. This may be regarded as evidence pointing to the great antiquity of their culture.

The entire complex found at the SU site represents an early period in the Mogollon culture, and the Field Museum Expedition has named it "the Pine Lawn Phase." The characteristic or predominant traits which as a whole distinguish the Pine Lawn Phase from any other phase or period, either earlier or later, will be described in detail in Dr. Martin's report on the 1941 expedition. This report is being prepared and will be finished in 1942.

The age of the Pine Lawn Phase at the SU village is difficult to determine; but by inference, and by cross-dating or comparing the tools now at Field Museum with those from other ruins, the site

can be dated within limits. Thus far, dating by means of tree-rings has been impossible because the rings on the SU logs (fragments of roof beams) do not fit into any known sequence. It is fairly certain, however, that the SU ruin is earlier than A.D. 700 because no decorated pottery was found in it. That is important, because decorated pottery was made in that area only *after* A.D. 700. Thus an upper limit of A.D. 700 is established. (It would be just as incongruous for the expedition to find decorated pottery in a site which was abandoned before A.D. 700 as it would be for an automobile to appear in a motion picture portraying a Civil War scene.)

Conversely, although the SU village stone tools are similar to those of the San Pedro period (found in southern Arizona by the archaeologists of Gila Pueblo) dating from about 3,000 B.C. to about 500 B.C., the SU village must date *after* that period because the SU villagers made pottery and the San Pedro people did not. A site yielding pottery is generally later than one lacking it.

Therefore, it seems that the SU village must have been founded, occupied, and abandoned some time between 500 B.C. and A.D. 700. Thus it seems safe to conjecture that the Mogollon culture is a new, pure, cultural entity in the Southwest, and that it should be accorded the same relative position of importance as has been given to the Basket Maker-Pueblo and Hohokam cultures.

Mr. Richard A. Martin, Curator of Near Eastern Archaeology, continued cataloguing the many specimens from Kish, an ancient Babylonian city. He also planned and supervised the installation of Harwa, the X-rayed mummy, in Hall J (Egyptian Archaeology), as well as supervising the planning of cases of Etruscan, Egyptian, Roman, Syrian, and Arabian jewelry in H. N. Higinbotham Hall (Hall 31).

Dr. Wilfrid D. Hambly, Curator of African Ethnology, has continued research on craniometry of the Pacific region, and has measured 150 skulls found on Pacific islands. He has begun preparation of a publication on a collection of thirty skulls from Ambrym, New Hebrides. The data should be especially welcome because research has failed to reveal the existence of any prior information on the skulls found on this island.

Dr. Hambly has also taken a large number of measurements on a collection of forty male and female skulls from the island of Malekula, close to the island of Ambrym. These skulls of Malekula, both male and female, are interesting because of deformation resulting from pressure applied to infant skulls. The only data so far

published by other writers consist of brief notes printed about the year 1881. Measurements have likewise been made on skulls from New Caledonia and the Solomon Islands. Dr. Hambly's ultimate aim is to make a detailed comparative study of measurements of crania from different parts of Melanesia. Field Museum's collection contains about 350 skulls from this region.

Dr. C. Martin Wilbur, Curator of Chinese Archaeology and Ethnology, completed the manuscript of his book *Slavery in China During the Former Han Dynasty*. He also devoted considerable time to acquiring and studying archaeological specimens from China for the exhibition and study collections. Basic studies were undertaken aiming toward a fresh presentation of Chinese ethnology, and reinstallation of the collection of paintings.

Dr. Alexander Spoehr, Assistant Curator of North American Ethnology and Archaeology, prepared a report published by Field Museum Press, entitled *Camp, Clan, and Kin Among the Cow Creek Seminole of Florida*. A report on the Oklahoma Seminole was also completed and is in press. Three other articles on South-eastern social organization were published in various journals. In addition, Dr. Spoehr supervised cleaning and sorting of archaeological specimens from the eastern United States and California.

Under the direction of Chief Curator Martin, Dr. Spoehr has continued the necessary research on plans for the reinstallation of Hall B (American Archaeology), as well as working on details of layouts for the exhibits themselves. Several cases have been installed. Further details about this hall will be found in this Report under Installations and Rearrangements (page 368).

Dr. Henry Field, Curator of Physical Anthropology until his resignation, which became effective October 1, continued his work on Part II of the publication entitled, *The Anthropology of Iraq*.

Mr. Donald Collier joined the staff on August 1 as Curator of Central and South American Ethnology and Archaeology. Shortly thereafter he was dispatched to Ecuador on a joint expedition for Field Museum and the Institute for Andean Research, of New York. His work involves promotion of cultural relations with Latin America as well as investigation of archaeological sites in little-known regions. Mr. Collier expects to return to Field Museum in February, 1942.

Mrs. Rose Miller continued valuable work as a volunteer, studying and arranging the collection of 3,000 rubbings of Chinese historical monuments.

Mr. John Rinaldo, Associate in Southwestern Archaeology, received the degree of Doctor of Philosophy from the University of Chicago upon the completion of his thesis, *An Analysis of Prehistoric Anasazi Culture Changes*, based on the collections of Field Museum and the work of Museum expeditions. In addition, Dr. Rinaldo wrote articles on southwestern prehistory which were published in various journals, and classified the prehistoric Hopi *bahos* collected by Charles Owen in 1901. Dr. Rinaldo is now working on Part II of the 1941 report on the SU site. A call to military service caused his absence for several months, and he is subject to recall by the Army early in 1942.

Miss Marjorie Kelly, Associate in Southwestern Archaeology, performed much general clerical work, as well as checking and sorting various archaeological specimens.

Mr. Millard Rogers, volunteer assistant, has been studying Chinese paintings with a view to preparing them for more adequate exhibition.

Miss Jane Darrow, volunteer assistant, has been of great help in many ways. In addition to the many tasks she accomplished for the Expedition to the Southwest, she sorted potsherds, typed manuscripts, catalogued specimens and at the year's end was preparing data for a report on pottery excavated in 1941 in New Mexico.

Miss Florence Parks Rucker, volunteer assistant, has catalogued and stored many southwestern pottery specimens, as well as typing the revised edition of an anthropological leaflet, *Civilization of the Mayas*, by J. Eric Thompson.

ACCESSIONS—ANTHROPOLOGY

The Department of Anthropology listed 33 accessions, comprising nearly 25,000 specimens. Of these, 751 were gifts, 78 were acquired by exchange, 48 were purchased, and approximately 24,000 were acquired by the Field Museum Archaeological Expedition to the Southwest.

Mr. Henry J. Bruman, of State College, Pennsylvania, contributed Huichol Indian ethnological specimens from the State of Jalisco, Mexico. Mr. Donald Collier, of Field Museum's staff, presented a Nazca comb from the south coast of Peru.

Mrs. Frank D. Gamewell, of Philadelphia, presented costumes of women from three primitive tribes living in southwestern China—the "Flowery" Miao, the Lisu, and the Kopu. The Museum previously had possessed no specimens from these interesting but little-

known people. Four Chinese ceramics of the T'ang and Sung periods were presented by Grow and Cuttle, Incorporated, of Chicago.

Colonel Wallis Huidekoper of Twodot, Montana, presented twenty-two superb, well-preserved ethnological specimens from the Plains Indians (Sioux, Crow, Cheyenne, and Arapaho tribes). Although the Museum's Plains Indian collection is among the finest in the world, this gift forms a valuable addition. A shirt which belonged to Chief Plenty Coups, and the dress of the wife of Chief Red Cloud, both received from Colonel Huidekoper, will be placed on exhibition during 1942 in Mary D. Sturges Hall (Hall 5—Indian Tribes of the Great Plains).

Major Oliver S. Picher, of Hubbard Woods, Illinois, presented several Arapaho ethnological specimens as well as material from the Southwest, Hawaii, and China. Mr. Charles Schmid, of Oak Park, Illinois, contributed an Alaskan trap known as a deadfall.

CATALOGUING, INVENTORYING, AND LABELING—ANTHROPOLOGY

During the year, 19 of the 33 new accessions were entered, as well as part of another new accession, and all or part of 20 previous accessions.

The number of catalogue cards prepared during the year totaled 1,081. A total of 1,238 were entered, some of which were held over from 1940. Since the first opening of the inventory books, the total number of catalogue cards entered is 227,733.

For the current year, the distribution of catalogue cards was as follows: North and South American archaeology and ethnology, 218; Chinese, Japanese, Tibetan, and Korean archaeology and ethnology, 452; African ethnology, 4; Near Eastern archaeology, 399; Melanesian and Polynesian ethnology, 5; physical anthropology, 3.

From copy prepared by members of the Department, the Division of Printing issued 344 labels for use in exhibition cases. Distribution was as follows: North and South American archaeology and ethnology, 190; Chinese, Japanese, Tibetan, and Korean archaeology and ethnology, 56; Near Eastern archaeology, 5; Gem Room, 93.

The Division of Printing also supplied 5 maps, 85 storeroom labels, 2,350 catalogue cards, and 3,760 subject index cards.

INSTALLATIONS AND REARRANGEMENTS—ANTHROPOLOGY

H. N. Higinbotham Hall (Hall 31) was opened to the public in June after being closed several months for reconstruction and

reinstallation. On display in this hall are magnificent collections of gems and jewelry installed under the direction of Mr. Henry W. Nichols and Dr. Paul S. Martin, Chief Curators of the Departments of Geology and Anthropology, respectively.

The jewelry installation by the Department of Anthropology illustrates man's use of precious metals and stones as personal adornment. The oldest pieces of gold in this hall, dating back some 5,000 years, are from Kish, an ancient Babylonian city. Egyptian gold on exhibition, made during the Graeco-Roman period, is studded with amethysts, bloodstones, garnets, and other brightly colored stones. Later pieces made by Etrurian craftsmen of the seventh to the fifth centuries B.C. excel in delicate gold workmanship.

The Peruvians were able, about one thousand years later, to work more intricate patterns than earlier goldsmiths, due to the discovery of welding, alloying, casting, and annealing. The Quimbaya of Colombia used gold and an alloy of gold and copper. The exhibited examples of the craftsmanship of both peoples show fine execution of detail with complex patterns.

The more modern jewelers of India and Algeria are noted for a gayer, more brilliant, effect. The former used enamel and gold, and were masters in delicate filigree. Gems, too, were used and according to popular belief certain stones were endowed with "magical properties." The Algerians also made large massive pieces, gayly studded with brightly colored cut glass not unlike costume jewelry of today.

Another new and interesting installation was that of Harwa, the X-rayed mummy. Installed in a small separate room in Hall J (Egyptian Archaeology) are Harwa and the X-ray machine given to the Museum by the General Electric X-ray Corporation of Chicago. Harwa, in his own enclosure in this dimly lighted room, stands in his ancient wrappings with only his head exposed, showing his leathery and withered skin. The X-ray machine may be controlled by visitors. When the button is pushed a plate of lead glass slides before the mummy and after a moment of darkness his X-rayed image appears on the fluoroscopic screen. On busy days automatic operation at 40-second intervals, requiring no use of the button, is provided.

The Department also prepared for Stanley Field Hall a case of Pueblo pottery representative of Anasazi painted ware.

Work continued during the year on the reinstallation of Hall B, which will contain the projected new exhibits pertaining to American archaeology. The purpose of this hall is

to present a graphic outline of the known history of the Indians in the New World up to the time of its discovery by white men. At present there is no hall in the Museum which gives a general picture of the course of American Indian civilization. Anthropologically speaking, North and South America form a single unit, although there are regional differences within them. Formerly Hall B dealt only with North America exclusive of the Southwest, and did not include Middle America. This region will be incorporated into a larger picture, showing North American archaeology in its proper relation to that of other regions of the New World.

Mrs. Anne Harding Spoehr, Artist, was added to the departmental staff in March to work on exhibits for Hall B. Since then she has sketched detailed layouts of exhibits planned by Chief Curator Martin and Curator Alexander Spoehr. She has carried out these plans on large pictorial maps, using well-chosen media to present the basic ideas accurately and adequately. Eight exhibits in the first of the three sections have been completed by Mrs. Spoehr.

Mr. Alfred Lee Rowell, Dioramist, has nearly completed the construction of a diorama depicting Cliff-Dwellers' life, the first of four dioramas planned for Hall B.

Mr. Robert Yule, Assistant, has made all the drawings and tracings to be used in Dr. Martin's report on the Southwest Expedition. Further, he has made a photographic record of jewelry in the Hall of Gems. For the Recorder of the Museum, he lettered the pages of a large book in which will be permanently recorded attendance and other statistics for the period from 1941 to 1954.

The total number of specimens restored and repaired during the year is 270. Mr. John Pletinckx and Mr. Tokumatsu Ito, skilled technicians, restored pottery from different regions of the United States, and Kish, and Pan pipes from South America. They also prepared and cast the mold for diorama shells, and constructed and installed the plaster molding for the doorway to the Hall of Gems.

Mr. Herbert Weeks, Preparator, until the time of his death in May, supervised the installation of the gold and silver specimens now on exhibition in the Gem Room (Hall 31).

Mrs. Myrtle Bright, typist-clerk, has done clerical work for the curators, as well as checking, relabeling, and rearranging specimens in storerooms and in cases of many halls.

Work on the geographical-subject index has been continued by Miss Jane Temple. About 5,000 subject index cards have been completed and checked for typographical errors.

Cases have been readjusted and relabeled where necessary. The labels in Hall K have been mounted. The sculptures by Malvina Hoffman in Chauncey Keep Memorial Hall (Hall 3) were completely relabeled. The Hemis katchinas in Hall 7 were repaired and reinstalled.

DEPARTMENT OF BOTANY

EXPEDITIONS AND RESEARCH

Field Museum's Third Botanical Expedition to Guatemala, begun in 1940, was concluded in 1941 by Mr. Paul C. Standley, Curator of the Herbarium. Mr. Standley conducted the first expedition during six months of 1938-39, and the second was conducted by Dr. Julian A. Steyermark, Assistant Curator of the Herbarium in 1939-40.

Mr. Standley, who left Chicago at the end of September, 1940, returned about the middle of May, 1941. During the seven months of collecting he obtained much additional material for use in preparation of a *Flora of Guatemala*, work upon which is under way.

Mr. Standley collected in almost all of the twenty-two departments of Guatemala except Izabal on the north coast, and the great Department of Petén, accessible with difficulty except by airplane. In most of Guatemala the rains, which are favorable to the development of vegetation, end in October, after which the plants rapidly deteriorate, especially at low elevations. In order, therefore, to take advantage of the continued effects of the rains, work was carried on first in the Oriente, or eastern Guatemala, a region of relatively scant rainfall. Collections were made there at various stations through October, November, and early December, after which time few plants are in good condition for study. The collections from this area were among the best obtained during the whole trip, and rich in new species or in plants unrecorded from Guatemala.

Leaving central Guatemala the day after Christmas, Mr. Standley spent several weeks at Huehuetenango, in northwestern Guatemala. This region which, unlike central and Pacific Guatemala, has no volcanoes, is traversed by the great cordillera that forms the backbone of Mexico and Central America. Previously it was almost unknown botanically. It has recently become accessible by a new automobile road that climbs within a few miles from about 7,000 feet to more than 11,000. At these high elevations there is a truly alpine vegetation, most untropical in appearance and com-

position. Dense and somber forests of pine and Mexican red cedar surround meadows that recall strangely those in the vicinity of Cripple Creek, Colorado, and many of the same groups of plants are represented in these two distantly separated areas. It was strange to find a giant agave or century plant in association with alpine buttercups, dwarf thistles, gentians, and a low gooseberry. The agave seemed quite out of place amid such surroundings.

Much of January, February, and March was devoted to work in the highlands and lower mountains of western and southern Guatemala, where there are infinitely varied forests of pine, fir, and cypress, and even richer ones of mixed broad-leaved trees. Much time was devoted also to collecting along the Pacific plains that lie between the long chain of volcanoes and the sea.

The last month of field work was centered at Cobán in the coffee region of Alta Verapaz, one of the outstanding centers of botanical wealth in all Central America. The flora here is quite different from that of other parts of Guatemala, and is particularly rich in palms, orchids, and many other essentially tropical groups. Some of the most interesting plants collected during the whole season were found near Cobán in sphagnum bogs apparently unvisited previously by botanists, in spite of the proximity of these bogs to one of the oldest roads of Guatemala.

The work of the expedition resulted in assembling some 19,000 distinct collections of plants, represented by twice as many specimens. The small part of the collections thus far studied has revealed substantial additions to the rich flora of this Central American republic.

Like previous expeditions to Guatemala, this one was fortunate in receiving the most cordial and often very substantial support from Guatemalan officials, above all from Don Mariano Pacheco Herrarte, Director General of Agriculture, and from Professor Ulises Rojas, Director of the Botanic Garden of Guatemala. Special appreciation is due also to Dr. John R. Johnston, of the National School of Agriculture at Chimaltenango, whose thorough and sympathetic acquaintance with the country greatly facilitated the expedition's work. Dr. Johnston was a most congenial companion upon several visits to remote places.

A fourth botanical expedition to Guatemala left the Museum at the beginning of December, under the leadership of Assistant Curator Steyermark, who was accompanied by Mr. Albert Vatter, of Chicago, a volunteer assistant. It is expected that this party will remain in the field until the end of the rainy season of 1942,

and thus complete the Museum's botanical exploration of the country, preparatory to publication of a *Flora of Guatemala*.

From about the middle of the summer until nearly the end of the year, Mr. J. Francis Macbride, Associate Curator of the Herbarium, continued work on the *Flora of Peru* at the herbaria of the University of California. Available there are the complete series of the Goodspeed collections made during recent years in Peru and adjacent countries. Totaling many thousands of specimens, they make this university one of the most important centers for studying the plants of the Andean regions. On this visit Mr. Macbride was able to study only the large family Leguminosae (bean family), this being the group which will next be treated in the *Flora*. He found the Goodspeed collections supplemented by others, some unique, notably those of Balls and Belshawm. All these materials were placed freely at his disposal by the botanical staff, those directly concerned being Dean C. B. Lipman, Chairman A. R. Davis, Curator, Professor H. L. Mason, and Professor L. Constance. Professor I. H. Goodspeed, Director of the Garden, thoughtfully made available specimens that had not yet been transferred from his jurisdiction to the herbaria. With the fine library facilities which were made available to him without any formal restrictions, Mr. Macbride was able to pursue his research most effectively, and he records this co-operation with gratitude to all concerned.

An expedition to California was made in September and October by Dr. Francis Drouet, Curator of Cryptogamic Botany, and Mr. Donald Richards, of the University of Chicago. The primary purpose was to survey the blue-green algal flora of the inland regions of that state to supplement the large collections of the late Dr. N. L. Gardner and of Dr. M. J. Groesbeck represented in the Museum's cryptogamic herbarium. A general collection of other plants, especially bryophytes, was made at the same time. The expedition made short stops in eastern Colorado, Utah, and Nevada and then pursued a course in California from Alturas through Redding, Dunsmuir, Weaverville, Berkeley, Palo Alto, Yosemite, Porterville, Barstow, Needles, Blythe, Palm Springs, Calexico, and San Diego to Los Angeles. Algae were found in great abundance everywhere. In the volcanic soil of northeastern California, as well as in the sandy cultivated regions of the San Joaquin Valley, soil algae were never well developed; the streams, swales, and irrigation-ditches supported most of this flora. The deserts of the southeast, however, were found to be covered almost continuously in many places, at least wherever soil was present, with mats of algae, apparently the result

of many years of growth. The algae of this desert region are in fact the most abundant of all plants and often the only ones in evidence. It is surprising that they have been neglected in botanical exploration for all these years, especially since they play so important a part in the control of soil-erosion. About 8,000 specimens were collected during this expedition.

By arrangement with the government authorities of Venezuela, preparations were made for a joint Field Museum-Venezuelan Government Botanical Expedition to be conducted by Mr. Llewelyn Williams, Curator of Economic Botany, to the upper reaches of the Orinoco. Mr. Williams, whose previous explorations of the Venezuelan Guiana render him particularly fitted for this task, left New York by steamer in September for Caracas in order to complete there the organization of his party and equipment. At the present writing he is doubtless on his way southward into the interior. Much of the route Mr. Williams will follow has been made famous by Humboldt and Bonpland, and herbarium specimens, woods, and other economic plant materials will be gathered by him largely in localities made historic by the collections those early explorers sent to Europe. He will cover, likewise, a part of the route of the English botanist Spruce, who approached the southern end of the Venezuelan Guiana from a tributary of the Rio Negro to Rio Cassiquiari, which connects the river systems of the Orinoco and the Amazon.

In eastern Brazil, Dr. Gregorio Bondar made various excursions into the interior of the State of Bahia on behalf of the Museum, resulting in the discovery of new species of palms as well as large numbers of insects mentioned elsewhere.

Publications of the Department of Botany during 1941 were as follows: Botanical Series, Volume 9, No. 6, *Studies of the Vegetation of Missouri—II: Phanerogamic Flora of the Fresh-Water Springs in the Ozarks of Missouri*, by Julian A. Steyermark; Botanical Series, Volume 13, Part 4, No. 1, *Flora of Peru*, by J. Francis Macbride; Botanical Series, Volume 20, No. 4, *Tropical Marine Algae of the Arthur Schott Herbarium*, by William Randolph Taylor; Botanical Series, Volume 22, No. 7, *Additions to our Knowledge of the American and Hawaiian Floras*, by Earl Edward Sherff.

Curator Standley published in *Tropical Woods* a brief account of the forests of Guatemala. Assistant Curator Steyermark published several short papers treating of plants of the United States. Some reviews of foreign publications and abstracts of articles upon tropical



A CASSAVA MILL IN NORTHEASTERN BRAZIL

A common type of primitive industrial plant for the preparation of farinha from the starchy tubers of the manioc or cassava plant

American botany were contributed to *Tropical Woods*. Manuscript for an addition to the Leaflet Series was prepared by Associate Curator Macbride.

Considerable attention was given in the Department to the execution of the drawings for and the preparation of a manuscript on the *Fungi of the Chicago Region* by Verne O. Graham. Dr. B. E. Dahlgren, Chief Curator, and the Curator of Cryptogamic Botany spent much time in correcting and editing the manuscript. The illustrations and the manuscript occupied the full time of two artists and a typist of the Work Projects Administration until July. One WPA artist was occupied during the tenure of the project with making illustrations of undescribed Myxophyceae.

Through the year the phanerogamic collections of the Department were consulted by visiting botanists from near and remote regions of the United States and from South America; among such students were Dr. E. P. Killip, of the United States National Museum, and Dr. C. Vargas of the University of Cuzco, Peru, who came especially to examine the Museum's Peruvian collections.

Various workers from other institutions took advantage of the opportunity to study in the collections of cryptogams in 1941. Mr. Donald Richards and Mr. Lawrence J. King, of the University of Chicago, spent considerable time in study of bryophytes and algae respectively. Mr. William A. Daily, of the University of Cincinnati, visited the herbarium in August to complete his work on the Chroococcaceae of Ohio, Kentucky, and Indiana. Mr. Richard D. Wood, of Northwestern University, worked at intervals through the year on the collection of Characeae. Dr. Shigeo Yamanouchi, of the Carnegie Foundation, spent several continuous months in his studies on algae of the Orient. Mrs. Netta E. Gray, of the University of Illinois, worked here for a short time on the algae of Arkansas. Dr. Verne O. Graham and Mrs. Cloyd B. Stifler, of Chicago, devoted considerable time to work on the mycological collections.

Many plants were submitted to the Department during the year for study and determination. Numerous local plants were brought to the Museum for naming by residents of the Chicago region, and hundreds of inquiries regarding diverse aspects of botanical science were answered by letter, telephone, and interview.

ACCESSIONS—BOTANY

During 1941 the Department of Botany received 330 accessions, comprising about 80,000 items. The accessions included material

for the wood and economic collections and for the exhibits and herbaria. Of these, 20,598 were received as gifts, 4,880 as exchanges, 5,511 as purchases, and 49,413 were collected by Museum expeditions.

The total of numbered specimens in the botanical collections at the end of 1941 was about 1,100,000. About 33,000 sheets of specimens and photographs were added to the herbaria during the year, as well as a substantial number of typewritten descriptions of plant species prepared in the Department or received in exchange.

Of the total receipts, items for the herbaria amounted to 78,168, consisting of plant specimens and photographs. The largest accession of the year was composed of approximately 38,000 specimens collected in Guatemala by Mr. Standley, as described upon a preceding page. Other material obtained by members of the Department staff included 8,000 specimens collected by Dr. Drouet and Mr. Richards in California; 2,035 Venezuelan plants collected by Mr. Williams; 1,000 Missouri plants gathered by Dr. Steyermark; and 2,000 plants chiefly from Illinois, collected by Mr. Standley and Dr. Steyermark.

Largest and most important gift of material for the phanerogamic herbarium consisted of 1,732 specimens from Mexico, many from historical localities, presented by Dr. Harry Hoogstraal, of the University of Illinois. These were collected by Dr. Hoogstraal and Mr. William C. Leavenworth, in continuation of a similar series begun in previous years and obtained by parties of students from the University of Illinois.

Other important gifts of flowering plants during 1941 were received from Mr. Paul H. Allen, Balboa, Canal Zone; the Arkansas Agricultural and Mechanical College, Monticello; Dr. Hugh Cutler, St. Louis, Missouri; Dr. Delzie Demaree, Monticello, Arkansas; Mrs. D. M. Donaldson, Aligarh, India; Rev. Brother Elias, Caracas, Venezuela; Illinois State Museum, Springfield; Dr. John R. Johnston, Chimaltenango, Guatemala; Museo Nacional de Costa Rica, San José, through Professor Juvenal Valerio Rodríguez; Professor Henry Pittier, Caracas; Professor J. Soukup, Lima, Peru; Rev. Padre Cornelius Vogl, Caracas, and Dr. R. H. Woodworth, Bennington, Vermont. Besides these, there were 105 specimens of palms and economic material together with numerous photographs, obtained by Dr. Dahlgren in the north of Brazil in 1939. Among these are numerous palm specimens and photographs from the collection of Dr. Gregorio Bondar, of Bahia, including type material of that author's recently described species of *Cocos* and *Attalea* palms.

The largest of the exchanges of flowering plants consisted of 2,256 Argentinean specimens received from Instituto Miguel Lillo of Tucumán. Other important exchanges were received from the Arnold Arboretum, Jamaica Plain, Massachusetts; Dr. William Bridge Cooke, San Francisco, California; Milwaukee Public Museum; Missouri Botanical Garden, St. Louis; Mr. Robert Runyon, Brownsville, Texas; Texas Agricultural Experiment Station, Temple; Dr. Robert M. Tryon, Jr., Freelandville, Indiana; United States National Museum, Washington; the Herbarium of the University of Michigan, Ann Arbor, and Utah State Agricultural College, at Logan.

To the cryptogamic herbarium 25,019 specimens were added during 1941. About 11,500 of these were gifts from other institutions and individuals. The largest gift consisted of 7,285 fungi from the Department of Botany, University of Chicago. Others came from Mr. Donald Richards, Chicago, Illinois; Dr. Walter Kiener, Lincoln, Nebraska; United States Fisheries Laboratory at Logan, Utah; Dr. M. J. Groesbeck, Porterville, California; Mr. P. W. Wolle, Princess Anne, Maryland; Mr. Lawrence J. King, Chicago, Illinois; Mr. William A. Daily, Cincinnati, Ohio; Dr. V. O. Graham, Chicago, Illinois; Miss Netta E. Gray, Urbana, Illinois; Dr. W. G. Solheim, Laramie, Wyoming; Mr. H. S. Dybas, Chicago, Illinois; the University of California, Berkeley; Academy of Natural Sciences of Philadelphia; Dr. Lee Walp, Marietta, Ohio; Mr. Clyde T. Reed, Gregory, Texas; Dr. Herman Kleerekoper, São Paulo, Brazil; Dr. H. C. Bold, New York; Dr. V. W. Lindauer, Awanui, Far North, New Zealand; Dr. E. S. Deevey, Jr., Houston, Texas; Dr. Angel Maldonado, Lima, Peru; and Dr. G. W. Prescott, Albion, Michigan. The accession of some of the gifts listed above and of many smaller ones not mentioned is owing to the interest and efforts of Mr. Donald Richards and Mr. William A. Daily; through them a number of unique and historic collections of bryophytes and algae has been made available to students in this herbarium.

Specimens of cryptogams received in exchanges numbered 2,927. Because of the present international conditions, these came mainly from the western hemisphere. The one considerable set received from the eastern hemisphere consisted of 212 Myxophyceae collected by Dr. G. T. Velasquez, of the University of the Philippines.

Purchases of cryptogamic specimens included 2,180 algae and mosses, largely of old published European exsiccatae, from the Farlow Herbarium; 190 algae of Montana, from Mr. F. H. Rose; and 50 algae of Iceland, from Mr. William F. Palssen.

Details of all the gifts, exchanges, and purchases mentioned here, and others, will be found in the List of Accessions (page 435).

During the past year 46,073 prints from negatives of plant type specimens obtained in European herbaria by Mr. J. Francis Macbride, Associate Curator of the Herbarium, were supplied to botanists of North and South America at cost or in exchange for similar type photographs or for specimens desired by Field Museum.

CATALOGUING, INVENTORYING, AND LABELING—BOTANY

There were distributed in exchange during 1941, to institutions and individuals in North and South America, 84 lots of duplicate material, totaling 40,576 items. Included were herbarium specimens, wood specimens, and photographs. Received on loan, for study and determination, were twenty-three lots of material, comprising more than 1,650 separate items. Eighty-four lots, comprising 9,127 specimens, were lent for determination or for use in monographic studies.

Much of the work involved in the preparation of specimens of cryptogams for exchanges was performed by Mr. Donald Richards, of the University of Chicago. Records of all accessions, loan transactions, and photographs of type specimens supplied to other institutions, as well as the various card catalogues in the Department Library, were accurately kept up to date by Miss Edith M. Vincent, Librarian of the Department. The catalogues of the economic collections and woods were kept by Mr. Joseph Daston, who rendered valuable service also in the care and organization of the Department's files of photographs, of the growing palm collection, and in preparation of exchange material. In some of this work Mr. Daston was assisted by Miss Jeanne Paul, a student at Northwestern University who, because of special interest in botany, offered her volunteer services during vacation periods.

INSTALLATIONS AND REARRANGEMENTS—BOTANY

Some notable additions were made during the year in the exhibition halls of this Department. The most important of these is a habitat group in the form of a large diorama showing the intertidal vegetation of the rocky North Atlantic shore. This has been installed in Martin A. and Carrie Ryerson Hall (Hall 29—Plant Life), immediately to the right of the alpine meadow group which occupies the center of the north end of the hall. The new seaweed group thus adjoins the synoptic exhibit of algae.

Work upon this exhibit has been in active progress for more than a year. The material and studies on which it is based were obtained by two expeditions to the North Atlantic coast, one in 1939 by Mr. John R. Millar, and one in 1940 by Mr. Emil Sella, Chief Preparator in the Department of Botany. The first was sponsored by Mr. Sewell L. Avery, a Trustee of the Museum. Both expeditions visited the shores of the Bay of Fundy. The first one resulted in a large quantity of material with photographic records and observations which served as a basis for the planning of the general lines of the group. A sketch model was prepared by Mr. Millar (then a member of the Department of Botany staff, now Curator of the N. W. Harris Public School Extension) on his return to the Museum. When other duties later prevented Mr. Millar's further attention to the project, it was taken over by Mr. Sella, who carried the work to its present successful conclusion. From the point of view of museum technique the new diorama is a notable achievement. The usual plastic materials, from plaster of Paris to lucite, have served to produce a realistic replica of the seaweed covering a rocky sea-shore exposed at ebbtide.

Much of the essentially repetitious mechanical work required for this, as for various other recent exhibits, was performed under Mr. Sella's supervision by handicraft workers furnished by the Work Projects Administration. The background was painted by Staff Artist Arthur G. Rueckert.

Minor exhibits added in their respective places in the same hall were reproductions made in the Museum of a ginger plant grown at the Experimental Station of the Department of Agriculture of Trinidad and Tobago, and of a ripe fruit cluster of Nagal dates grown near Tucson, Arizona. Recent collecting by members of the staff in Brazil, Venezuela, and Guatemala furnished fruits, seeds, and plant products for installation or replacements in the exhibits of plant material in this hall. A large amount of work was also done during the year in preparation for further habitat groups to be installed in the south end of the hall.

A small-scale diorama of a cassava mill was added to the food plant exhibits in Hall 25. Based on observations and photographs made in northeastern Brazil, this was begun several years ago. The many small-scale figures, buildings, trees and other plants of which it is composed, were made by WPA craftsmen and artists under staff supervision. This material, properly adapted, reassembled, and supplied with a painted background, forms a small diorama which

serves to give an excellent idea of the preparation of farina, or farinha, from the tubers of the cassava plant. Known to us chiefly as the source of tapioca, this is one of the most important food plants of tropical America. It was grown by the Indians in pre-Columbian days, was adopted by the white settlers, and is still the chief source of starchy food in large parts of South America, particularly west of the Andes. It is in many places even more important than corn, its only rival among the starchy food plants of the western hemisphere.

In response to the growing popular interest in soybeans, a special exhibit has been installed in the same hall, showing many varieties of the soy, an ancient crop plant of the Far East, which is assuming importance in the United States, especially for fodder and industrial purposes.

The palm exhibits on the north side of the same hall have been enriched by some additions, the most notable being specimens of the leaves and wax of the licury or "ouricury" palm of Bahia, a gift in part of Dr. Gregorio Bondar. Some additions and improvements have also been made in the babassú material presented some years ago by Mr. H. F. Johnson, Jr. This large palm with its heavy clusters of fruit—each containing five to six oleaginous kernels—is found over thousands of square miles in the northern Atlantic states of Brazil, and is of interest and of growing importance as an available source of oil at a time when the copra trade is at a standstill and the African supply of palm oil is becoming inaccessible. The cohune palm exhibit also received some attention, and some additions were made to the ivory nut palm and other installations.

In Charles F. Millsbaugh Hall (North American Woods—Hall 26) six new colored transparencies were added to those installed during the past few years. These complete the series of North American woodland scenes which occupy the lower part of the window openings. They serve to add interest to the woods displayed, and to modify advantageously the lighting in this hall. A few improvements were made in the exhibits by replacement of various photographs with new, more satisfactory ones obtained mainly from the United States Forest Service, and by the addition of a section of a cypress knee in the southern cypress exhibit. Three western woods—western alder, noble fir, and Sitka spruce—which were lacking from the display of principal North American forest trees in this hall, have finally been secured and await drying and installation.

The Hall of Foreign Woods (Hall 27) has received numerous additions: seven Venezuelan woods received from Señor Joaquín



SEAWEEDS ON THE NORTH ATLANTIC COAST

A new life size diorama with painted background showing the vegetation consisting of brown red and green algae covering the rocks of the seashore between tide levels

Martin A. and Carrie Ryerson Hall (Hall 29 Plant Life)

Constructed by Chief Preparator Emil Sella with assistance of WPA workers

Avellan, Caracas; and three Peruvian woods, three Central American, two Mexican, three Hawaiian, two Australian, two African, and two European woods, from various donors, including Russel Fortune Inc., Indianapolis; Penrod, Jurden and Clark, Cincinnati; T. H. Smith Veneers, Inc., Chicago; Ichabod J. Williams and Sons, and C. H. Pearson and Sons, New York. To the African woods there was added a large cross section of a trunk of one of the hardest and heaviest woods known—leadwood (also called ironwood or “hardekool”) of South Africa—collected by the Vernay-Lang South African Expedition.

By alterations in the arrangement of the offices and laboratories, space was provided for the Department's large wood collection, for the palm herbarium, and for the expansion of the herbarium of cryptogams. Better laboratory and other working space was also thus acquired for the preparation of botanical exhibits.

The work of determining the thousands of collections of Myxophyceae received was continued by Dr. Drouet during 1941. One of the major projects, begun in 1940, was work on the N. L. Gardner herbarium of blue-green algae. A portion of this was prepared during 1941 for filing here and at the University of California, and for distribution in exchanges with other herbaria. With Mr. William A. Daily of the University of Cincinnati, work was continued on a revision of the Chroococcaceae, even though its scope was seriously hampered by the international situation, which prevented the borrowing of historic material from European herbaria. The collection of fungi was carefully surveyed and put in order in new herbarium cases installed in Room 9.

More ample storage space for the wood collection made possible its more orderly rearrangement and the filing of the Museum's large and growing number of authentic wood specimens. Several thousand recently added South American woods were cut into standard sizes for the study collections, several duplicates of each number being provided at the same time for purposes of exchange.

A large amount of bulky palm material in storage was cut and made into box and herbarium specimens, cases for which were provided by the addition last year of a large number of new steel herbarium cases in the general herbarium of flowering plants. About two thousand copies of original descriptions of palms and as many photographs were filed in the palm herbarium.

Three employees of the Work Projects Administration spent all of their time until July 1, when the WPA project was discon-

tinued, in mounting specimens of cryptogams on sheets for filing in the herbarium, and in renovating packets of the older collections accumulated in past years. Thus, at the end of 1941, the entire collections of algae and bryophytes, and most of the lichens, rest in the herbarium in such a condition that portions of the specimens cannot easily be lost or broken.

Work of mounting new collections of vascular plants did not proceed so rapidly as in previous years because of withdrawal of WPA employees, with whose assistance the work had been kept fully up to date in recent years. At the end of 1941 a large quantity of material was still awaiting preparation for distribution into the study collections.

DEPARTMENT OF GEOLOGY

EXPEDITIONS AND RESEARCH

Mr. Bryan Patterson, Assistant Curator of Paleontology, and Mr. James H. Quinn, Chief Preparator in Paleontology, spent three months collecting vertebrate fossils in Colorado, Nebraska, and South Dakota. This expedition enriched the collections of vertebrate fossils by more than 500 specimens from the De Beque formation. It obtained skulls and many bones of the large hoofed mammal, *Coryphodon*, a partial skull of an early member of the rhinoceros group, and a number of small primates. The careful stratigraphic observations made will permit recognition of several faunal horizons within the early Eocene portion of the De Beque formation. The party also obtained the skeleton of a large Mosasaur in South Dakota, early Pliocene and Pleistocene mammals in Nebraska, and fossil plants from the Green River formation in Colorado.

Mr. Paul O. McGrew, Assistant Curator of Paleontology, left early in November on an expedition to Honduras to collect fossil mammals. An important objective of this expedition is determination of the disputed date of the emergence of the Isthmus of Panama from the sea. This date, upon which paleontologists do not yet agree, is of geological importance. Its determination will solve several mysteries concerning migrations of mammals in the geological past, and help in the solution of other paleontological problems.

Dr. Sharat K. Roy, Curator of Geology, spent two and a half months on an expedition to western and northern New York where he collected exhibition specimens of invertebrate fossils from the Upper and Middle Devonian. The object of the expedition, which was fully accomplished, was to secure material to fill gaps in the

exhibited collection before its contemplated reinstallation was undertaken. In addition to exhibition material, many specimens for use in researches leading to future publications were collected.

To facilitate research, Assistant Curator McGrew spent three weeks studying collections in eastern museums. Chief Preparator Quinn also spent two weeks in the east studying improved methods of preparation and installation. A continuous program of research based on vertebrate fossil specimens collected by Museum expeditions was carried on by Assistant Curators Patterson and McGrew. Papers written by Mr. Patterson were: *A New Phororhacoid Bird from the Deseado Formation of Patagonia*, published in the Geological Series of Field Museum, and *Two Tertiary Mammals from Northern South America*, now in press, which will appear in the American Museum Novitates. Papers by Mr. McGrew, all of which have appeared in the Geological Series of Field Museum, were *Heteromyids from the Miocene and Lower Oligocene*; *A New Miocene Lagomorph*; *A New Procyonid from the Miocene of Nebraska*; and *The Aplodontioidea*. A paper by Mr. Grayson E. Meade, *A New Erinaceid from the Lower Miocene*, describing a type specimen in the Museum collections, and one entitled *A New Fossil Alligator from Nebraska*, by Mr. Karl P. Schmidt, Chief Curator of the Museum's Department of Zoology, were also published in the Geological Series. In the Museum's Memoirs Series there was published *The Upper Ordovician Fauna of Frobisher Bay, Baffin Land*, by Dr. Sharat K. Roy, Curator of Geology.

A paper by Dr. D. C. Dapples of Northwestern University, on sands collected by Field Museum Asiatic expeditions, was published in the *Journal of Sedimentary Petrology*.

ACCESSIONS—GEOLOGY

Sixty-three accessions, including 530 specimens, were recorded in the Department of Geology during the year. Of these, 377 classified as gifts, 24 were from exchanges, 115 were from expeditions, 7 were purchased, 5 were transfers from other Departments, and 2 were made in the Department workrooms. These figures omit many of the specimens collected by expeditions, because the unpacking and classification of these, although now under way, have not yet been completed.

The most important gift of the year is a collection of twenty-three gems of fine quality presented by Mrs. Richard T. Crane, Jr., of Chicago. This collection includes a ruby, sapphires, topaz, tourmalines and other choice gems for H. N. Higinbotham Hall (Hall 31).

The gem collection was increased also by the addition of twenty-four miscellaneous gems presented by Dr. Paul Boomer, of Chicago. Four step-cut white beryls of fine quality, weighing more than sixteen carats, were presented by Dr. Benedict Gresky, of Chicago, and make another desirable addition to the Hall of Gems.

The semi-precious and ornamental section of the gem collection was enlarged by the addition of thirty-one specimens of Mexican onyx (cabochons and other ornamental shapes) presented by Mr. William E. Menzel and Mr. Steven Gulon, of Chicago, and Mr. O. C. Barnes, of Los Angeles, California, and a thomsonite of exceptional size and quality presented by Mr. O. A. Gentz, of Chicago. Mr. A. H. Becker, of Madison, Wisconsin, presented a large mass of moonstone in the rough from which it is expected fine specimens can be cut.

The mineral collection was increased by gifts of seventy-two specimens from sixteen donors, and twenty obtained by exchange. Most of these are of superior or even semi-precious quality. Especially noteworthy is the gift of thirty-five minerals, mostly of semi-precious quality, from Mrs. John Stuart Coonley, of Chicago. The specimens include amber, lapis lazuli, agate, and other minerals equally esteemed for ornament.

Sixteen minerals obtained by exchange with Mr. Glen H. Hodson, of Elmhurst, Illinois, include the largest slice of iris agate known, and what are believed to be the finest examples of wulfenite, diopside, caledonite, and aurichalcite in the United States. A gift from Mr. Claron Hogle, of Duluth, Minnesota, added to the mineral exhibit a thomsonite superior in quality to any before exhibited. Mr. O. J. Salo, of Red Lodge, Montana, added to his gifts of former years eight specimens of dahlite. Mr. Willard Bascom, of Golden, Colorado, presented specimens of the rare minerals cerite, allanite, and euxenite, and Mr. John Butrim, also of Golden, Colorado, gave a specimen of rare talctriphyllite. A mass of algae transformed into chalcedony, locally called algal agate, the gift of Mr. Henry E. Lee, of Rapid City, South Dakota, promises to make an unusually attractive specimen when prepared for exhibition.

The meteorite collection was increased by one specimen received as a gift, one obtained by exchange, and seven specimens resulting from purchases. An important addition to the tektite collection was the gift of twelve tektites presented by Dr. R. F. Barton, of Manila, Philippine Islands.

CATALOGUING, INVENTORYING, AND LABELING—GEOLOGY

During 1941, there were 1,825 entries made in the Department's twenty-nine record books. All specimens received during the year were catalogued except such specimens from expeditions as have not yet been sufficiently prepared and classified to permit cataloguing. All specimens of the gem collection were recorded in a new record book, and its classified card catalogue has been checked and the cards reassembled in final order. All classified card catalogues have been kept up to date. In all, 1,565 cards were added to these catalogues.

INSTALLATIONS AND REARRANGEMENTS—GEOLOGY

Reinstallation along the improved lines detailed in the 1940 Report continued through the year. The two most important changes were the complete reinstallation of the gem collection in H. N. Higinbotham Hall (Hall 31), and continuation of the conversion of Ernest R. Graham Hall (Hall 38) into a Hall of Vertebrate Paleontology. With the exception of Higinbotham Hall, which was closed for several months, it has been possible to conduct the work so that only a few exhibits have been withdrawn from display at any one time. After months of study and preparation, the collections of gems and jewels in Higinbotham Hall have been completely reinstalled and are now displayed in surroundings worthy of them, and in a manner that brings out their full beauty of color, luster, and brilliance as never before.

Higinbotham Hall has been completely rebuilt both architecturally and as to style of installation and lighting of exhibits. New cases were designed by the best available talent. The principal collection is placed in eight island cases. These have an exterior of English harewood matching the trim of the hall. The glass is framed in polished bronze, and the interiors are of bird's-eye maple. The gems are illuminated by concealed fluorescent lights which enhance their brilliancy. Seventeen smaller cases in the walls contain the jewelry collection and three special collections. High in the wall opposite the entrance is a stained glass window by Tiffany representing a mermaid rising from the sea. The collection now contains more than 3,000 specimens. The hall was reopened to the public on June 19.

The conversion of Ernest R. Graham Hall (Hall 38) from a hall of general paleontology to a hall of vertebrate paleontology has continued steadily. The extension of vertebrate paleontology to

occupy the entire hall made it possible to adopt a more roomy, as well as a more attractive, arrangement of exhibits. The arrangement in alcoves of uniform extent was abandoned in favor of an alternation of larger and smaller alcoves. A pleasing arrangement was adopted, making the alcoves conform in extent with the Charles R. Knight murals above them. This again was modified by the need for open spaces about the larger exhibits on the floor.

The type of casing adopted for the new arrangement consists of upright cases ten and twelve feet in length and two to four feet in width, with bases only twelve inches in height. These cases provide an exhibition space of six feet vertically, and are lighted by fluorescent tubes. Shelving has been almost entirely dispensed with, and exhibits either stand upon simple bases which cover the entire floor of the cases, or are attached by means of studs or brackets to the back of the cases, or to a screen where cases face two ways. By this arrangement, shadows within each case are almost entirely eliminated, and a freer arrangement of exhibits is made possible.

Two new exhibits were added, and six cases were rearranged, regrouped, improved by the addition of restoration drawings in color, and installed in the new type of upright cases. A skeleton of *Procamelus*, prepared last year, was added to the camel series, and a skeleton of *Oxydactylus*, which had formerly occupied a floor case, was remounted. These two cases, together with an evolutionary series, form the basis of an alcove devoted to camels. A slab from the Agate Springs Fossil Quarry was installed in a floor case. The various elephant and mastodon specimens were worked over, and a series of teeth and jaws was selected and grouped in a careful study by Assistant Curator Bryan Patterson and Chief Preparator James H. Quinn. Thus was formed a systematic exhibit illustrating the relationships of these two families. The case was made more attractive by four splendid restoration paintings, prepared by Mr. John Conrad Hansen. The carefully studied arrangement of this case, together with the introduction of restorations in color, set a new standard in the exhibition of fossil vertebrates in this Museum.

A La Brea (California) Tar Beds exhibit, consisting of a skeleton of the great sloth *Paramylodon* and a saber-tooth tiger *Smilodon*, was constructed and installed by Chief Preparator Quinn; it includes another restoration painting by Mr. Hansen. A case of pig-like mammals and oreodonts, including members of four families, was prepared by Mr. Elmer S. Riggs, Curator of Paleontology, and other members of the staff. An exhibit, Rodents of the Western

Hemisphere, arranged on the background of a chart to illustrate the branching out of various lines of development, was prepared by Assistant Curators Paul O. McGrew and Bryan Patterson. A striking exhibit of skeletons of great flightless birds, including a Moa from New Zealand, and the *Mesembriornis* of Argentina, was prepared by Mr. Quinn under the supervision of Mr. Patterson. An exhibit of skulls of horned titanotheres was prepared by Curator Riggs and Preparator Harold Gilpin. All of these exhibits are accompanied by rather brief descriptive labels and illustrated with restoration paintings.

Duplicate specimens which have been exhibited in the past were brought to the third floor and stored, as were also a number of specimens too large for the cases provided, or undesirable for further exhibition. To receive such exhibits twelve A-type cases and one square case, recently discarded, were brought to Rooms 101 and 103. A large case was built in the storage space of Room 107 to receive and protect the type specimen of the large dinosaur *Brachiosaurus*.

Preparation of vertebrate fossils for exhibition and study continued throughout the year. At the beginning of the year the regular staff was assisted by a well-trained force of four men from the Work Projects Administration, and one volunteer. Because of the closing of the WPA project, the working force of the laboratories was gradually reduced until by June 1 only the regular staff remained.

Important specimens prepared include two skeletons of the small Miocene camel, *Stenomylus*, two of the primitive deer *Aletomeryx*, and one of a small oreodont. In addition, forty-one skulls of fossil mammals, a similar number of jaws, several hundred odd bones, and three carapaces of fossil turtles were prepared. Much time and labor were expended in remounting old exhibits to adapt them to the new cases in which they are now exhibited. Six of the larger old exhibits were remounted, and the mounts of a number of the smaller exhibits were improved.

The thirty-six cases which contain the invertebrate fossil collections were moved from Ernest R. Graham Hall (Hall 38) to Frederick J. V. Skiff Hall (Hall 37), which is to be the new invertebrate hall. The contents of these cases remain for the present installed in the old style—on shelves or the floors of table cases. Preparation for a thorough revision of this collection and the incorporation of material from Dr. Roy's 1941 expedition is in progress.

The collection of metallic ores which fills the east end of the hall has been left undisturbed until it can be moved to its new position in Hall 36. The entire collection of economic geology which formerly filled Halls 36 and 37 is in process of condensation to occupy Hall 36 only. Thus far, five double cases, with contents corresponding to ten of the old cases, have been installed and placed in the west end of the hall.

Many of the specimens from the old installation required, besides ordinary renovation, additional preparation involving much time and labor before they were ready for reinstallation. Nearly 150 of them were cut to better shape on the stone saw. Hundreds of holes for supports were drilled in rocks, some of them so hard as to require use of the diamond drill. The hundreds of new trays, label holders, supports, and other accessories needed were made in the Department workrooms.

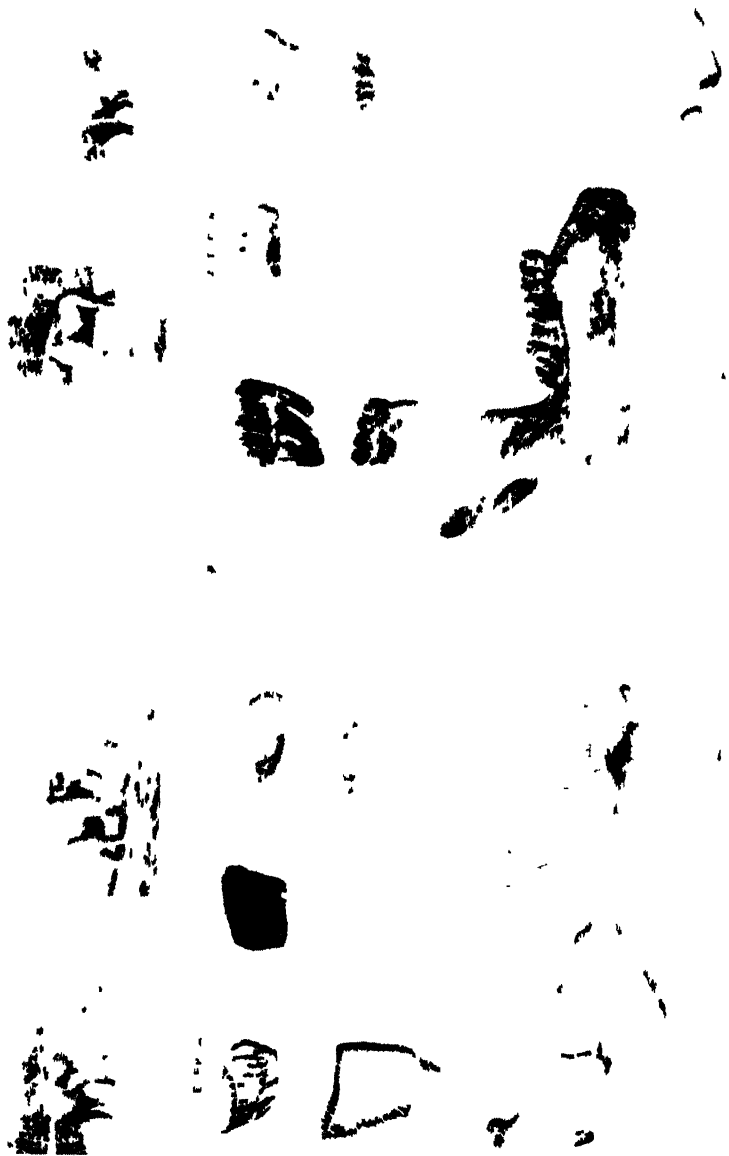
Reinstallation of Clarence Buckingham Hall (Hall 35), which contains the structural and dynamical collections, has been temporarily suspended, partly on account of reinstallation work elsewhere and partly because recent expeditions have provided superior material which requires much preparation before it can be exhibited. The case containing rare gases, invisible until excited by electric current, which had been out of order for some time, was repaired through the courtesy of the Air Reduction Company, and is now again in operation.

The fluorescent lamp which illuminates the exhibit of fluorescent minerals failed after five years' use and has been replaced. No changes were made in the mineral collection which occupies the east end of Hall 34. The meteorite collection which fills the west half of the hall was enlarged by the addition of specimens of nine meteorites not before represented, and twelve tektites.

A beginning was made on the transfer of the mineral study collection from storage space beneath exhibition cases in Hall 34 to a permanent place in Room 116. This work, which was begun by Mr. Bryant Mather, Assistant Curator of Mineralogy, was interrupted by his absence in the service of the nation during the last half of the year.

The transfer of the invertebrate study collections to their permanent place in Room 111 continued. During transfer, all specimens and their labels were checked, data for the classified catalogue entries for the results of this year's expedition were prepared, and gaps in the collection were noted for filling by future expeditions.

THE ELEPHANTS AND THEIR EXTINCT RELATIVES



DEPARTMENT OF ZOOLOGY

EXPEDITIONS AND RESEARCH

The most important of the Museum's zoological expeditions in 1941 was the Leon Mandel Galapagos Expedition which sailed on the yacht *Carola* from Havana on January 4. This was the fifth Field Museum expedition to be sponsored by Mr. Leon Mandel, of Chicago. Included in the scientific and technical personnel were Dr. Wilfred H. Osgood, Curator Emeritus of Zoology, leader of the scientific party; Mr. Rudyerd Boulton, Curator of Birds; Mr. Melvin A. Traylor, Jr., Associate in Ornithology; Mr. Loren P. Woods, Assistant Curator of Fishes; Mr. Leon L. Walters, Staff Taxidermist; Captain William Gray, and Mr. Ronald Lambert.

The expedition returned to New Orleans on March 12, after visiting and collecting in and about all of the principal islands of the Galapagos archipelago and Cocos Island, visiting the coast of Peru, and collecting on the high seas. Excellent representative collections made by this expedition comprise 440 birds and 1,955 marine fishes. These supplement previous collections made by the Crane Pacific Expedition some years ago. Included in the results of the expedition were materials for a biological exhibit demonstrating speciation in birds, accessories and specimens for a habitat group of Galapagos fishes, and studies and molds of a 13-foot manta or "devil fish" for the new Hall of Fishes (Hall O).

Early in July, Mr. Colin C. Sanborn, Curator of Mammals, returned to Peru to complete his project for studies of tropical bats undertaken under the joint auspices of the John Simon Guggenheim Memorial Foundation and Field Museum in 1939. With the addition of funds from the Museum, Mr. Sanborn will remain in the field well into 1942, completing the survey of type localities of mammals in southern Peru begun on the Magellanic Expedition of 1939-40. He is also collecting for several other divisions of the Museum. At the end of the year he reported sending a shipment of six cases of specimens, including 50 bird skins, 255 specimens of mammals, large numbers of fishes, reptiles, amphibians, and bats in alcohol, and various invertebrates. The most notable segment of his itinerary in 1941 was the trip to the Santo Domingo Mine, where he was entertained by Mr. L. C. Woods. This locality is famous in the history of the zoological exploration of Peru as the "Inca Mines."

Other Museum field work was more strictly limited to the scope of the divisions concerned. During the spring and summer, Mr.

Emmet R. Blake, Assistant Curator of Birds, and Mr. Melvin A. Traylor, Jr., Associate in Ornithology, conducted a field trip in the southwestern and Rocky Mountain states to collect miscellaneous nesting material and accessories for a projected addition to the series of biological exhibits in Hall 21. The present unit, for which a considerable nucleus has been collected, is designed to illustrate the amazing diversity of nest construction, the wide range of habitats utilized for concealment of nests and protection of eggs and young, and other elements of the breeding biology of birds. A total of 422 specimens was collected, including 156 bird skins, 42 skeletons and preserved specimens, 87 nests with habitat accessories and photographic studies, 37 sets of eggs, 81 reptiles, and 19 mammals.

Field work for the Division of Reptiles included several collecting trips by Curator Clifford H. Pope within Illinois, by means of which he was able to familiarize himself with the animal geography of the state. Chief Curator Karl P. Schmidt, accompanied by his son, Mr. John M. Schmidt, and by Mr. C. M. Barber, of Hot Springs, Arkansas, a former member of Field Museum's staff, visited Arkansas and Texas where they collected 245 amphibians and reptiles.

Mr. Pope represented the Museum at the meetings of the American Society of Ichthyologists and Herpetologists at Gainesville, Florida, in April.

Mr. Alfred C. Weed, Curator of Fishes, spent several weeks in August and September at the Marine Station of the United States Commission of Fisheries at Beaufort, North Carolina. He paid especial attention to the collecting of mullets, for his part in the preparation of a general account of North Atlantic coastal marine fishes to be prepared by a co-operating group of ichthyologists. After his return from the Mandel Galapagos Expedition, Assistant Curator Woods took part in four local collecting trips, as part of a general study of the fish fauna of the Chicago region.

A limited amount of local insect collecting was done in the Chicago region by Curator William J. Gerhard and Assistant Curator Rupert Wenzel. In connection with his research on beetles of the family Histeridae and on the insect parasites of bats, Mr. Wenzel spent several weeks in the study of collections in eastern museums. Aided by Mr. Henry Dybas, Mr. Wenzel has made a thorough examination of the alcoholic collections of bats in the Museum, and some of the bird skins, and has obtained some 1,355 specimens of insect parasites. This important collection thus results from the accumulated expeditions of past years.

Dr. Fritz Haas, Curator of Lower Invertebrates, spent two months, April 3 to June 3, on the California coast at the Scripps Institution of Oceanography, La Jolla, and the Hopkins Marine Station, Pacific Grove. At both of these stations he was most cordially received and supplied with facilities for collecting and study. His collections amount to more than 3,000 specimens of mollusks, with much material of other invertebrate groups. Dr. Haas attended the meetings of the American Malacologists' Union in Rockland, Maine, in August, and presented a paper on *Habits of Life of Some West Coast Bivalves*.

Mr. Frank C. Wonder, Assistant Taxidermist, joined an expedition to Mexico in the summer of 1941, led by Mr. Harry Hoogstraal, of the University of Illinois. Mr. Wonder collected a total of 358 specimens of mammals in the interesting region about Mount Tancitaro, in the state of Michoacan. The birds collected by other members of the party were purchased for the Museum collection, and other collections from this region, made by Mr. Hoogstraal's expedition during the previous year, form a satisfactory nucleus of material for various scientific reports in preparation.

During July and August, Mr. C. J. Albrecht, Staff Taxidermist, visited the whaling station at Eureka, California, to make photographic studies and casts of whales for his series of models for a projected Hall of Whales. A visit to Monterey Bay enabled him to photograph sea otters, rare marine mammals which enjoy complete governmental protection.

The publications in the Museum's Zoological Series reflect a considerable share of the current research in the Department. Volume 27 in this series, devoted to papers on mammalogy, was published as a testimonial of the Museum's appreciation of Curator Emeritus Osgood, various papers being invited from his colleagues in other institutions. Two papers from the Museum staff (listed below), are included, together with appreciations by President Stanley Field and Director Clifford C. Gregg, and a portrait of Dr. Osgood.

Publications by the staff are: *Descriptions and Records of Neotropical Bats*, by Curator Colin C. Sanborn; *Birds from the Yucatan Peninsula*, by Associate Melvin A. Traylor, Jr.; *Two New Birds from British Guiana*, by Assistant Curator Emmet R. Blake; *Reptiles and Amphibians from Central Arabia*, *A New Fossil Alligator from Nebraska*, and *The Amphibians and Reptiles of British Honduras*, by Chief Curator Karl P. Schmidt; *The Herpetological Fauna of the*

Salama Basin, Baja Verapaz, Guatemala, by Chief Curator Karl P. Schmidt and L. C. Stuart; *Copulatory Adjustment in Snakes*, by Curator Clifford H. Pope; *The Arteries of the Forearm in Carnivores*, by Curator D. Dwight Davis; *New and Little Known Neotropical Histeridae (Coleoptera)*, by Assistant Curator Rupert L. Wenzel and Henry S. Dybas; and *Malacological Notes--II* and *Records of Large Fresh-Water Mussels*, by Curator Fritz Haas. Galley proof has been corrected for a volume of the *Catalogue of the Birds of the Americas*, dealing with game birds, in which Research Associate Boardman Conover is co-author with Dr. Charles E. Hellmayr, Associate Curator of Birds. It is hoped that this may appear early in 1942. A part of the remaining manuscript, covering various families of water birds, is with Dr. Hellmayr in Geneva, Switzerland, and much concern is felt as to the possibility of obtaining it in 1942. Dr. Hellmayr's manuscript on the hawks and eagles has been received. Due to the large additions necessitated by the Museum's acquisition of the Leslie Wheeler Collection, this part will amount to a separate volume.

Other publications in the Zoological Series include *New Termitophilous Diptera from the Neotropics*, by Dr. Charles H. Seevers of the YMCA College, Chicago, and *A New Subspecies of Sceloporus jarrovi from Mexico*, by Hobart M. Smith and Bryce C. Brown. Considerable progress was made on the third and last part of the *Bibliography of Birds*, by Dr. R. M. Strong.

Numerous minor papers and reviews were published by various members of the staff in technical journals. Chief Curator Schmidt continued as Herpetological Editor of the journal *Copeia*.

The research activities of the Department are only partly reflected in the list of publications. In the Division of Mammals, Curator Emeritus Osgood has a comprehensive account of the mammals of Chile in an advanced state of preparation; and Curator Sanborn had continued his taxonomic researches on bats, with a revision of the genus *Rhinolophus* nearly finished at the time of his departure for Peru.

In the Division of Birds, Curator Boulton continues his major interest in African birds, especially of Angola, and Assistant Curator Blake has devoted some time to research on the birds of British Guiana. The major part of Mr. Blake's time available for research has been spent on considerable collections of Mexican birds, in which he is joined by Mr. Harold Hanson, of the University of Wisconsin, collector of a part of the material.

In the Division of Reptiles, Curator Pope has begun to set in order the Asiatic collections, while Chief Curator Schmidt continues his interest in the herpetological faunas of upper Central America and of Peru.

In the Division of Fishes, Curator Weed is engaged in studies on mullets for a general account of the Atlantic species. Mr. Woods is engaged in the preparation of an annotated list of the Galapagos and Cocos Island fishes obtained by the Leon Mandel Galapagos Expedition.

The research program of the Division of Anatomy continued to center around the morphology of the bearlike carnivores. Interpretation of the considerable mass of data that has accumulated on the giant panda demands much collateral research, and some of this is so extensive that it must be handled separately in the form of preliminary reports. Two such reports were completed during the year—one, by Dr. Walter Segall, of Rush Medical College, on the structure of the auditory region in Carnivores; the other, by Curator D. Dwight Davis, assisted by Miss Elizabeth Story, on the arteries of the forearm in carnivores. Working under a special research stipend, Dr. Segall is continuing his studies of the auditory region of mammals as time permits. Miss Peggy Collins, of Glen Ellyn, Illinois, volunteered her services as artist for several months, during which she prepared an excellent series of drawings to illustrate Dr. Segall's report. Other similar projects were under way at the end of the year.

The Museum continued its policy of extracting the maximum of scientific value from the animals that die in the zoo of the Chicago Zoological Society. In addition to preparations of material for use in the Museum itself, the brain of a cassowary was prepared and supplied to the University of Toronto, where special studies on brain structure are being conducted, and twenty-five mammal hearts were forwarded to the University of Oklahoma Medical School for use in studies on the aortic arch pattern in mammals. Because of the active interest in the anatomy of the Primates, particularly of the great apes, a fine adult female orang-utan was embalmed, and its circulatory system injected with latex. It is being stored for use as occasion demands.

In the Division of Insects, Curator Gerhard's time has been occupied with planning, labeling, and installing cases of North American and exotic butterflies and moths for exhibition. Assistant

Curator Wenzel continued his active studies on the beetles of the family Histeridae and on the various insect parasites of bats.

In the Division of Lower Invertebrates, Curator Haas continued to obtain a by-product in the form of malacological notes from his curatorial work on the collection. The prospect, toward the close of the year, of the acquisition of the large and important Walter F. Webb collection of mollusks means a further period of time in which the permanent arrangement of the collection, in the absence of assistance, will absorb the major part of his time.

ACCESSIONS—ZOOLOGY

The total number of accessions for the year is 413, consisting of 73,559 specimens. These comprise 926 mammals, 8,655 birds and 53 eggs, 2,086 amphibians and reptiles, 11,789 fishes, 44,004 insects, and 6,046 lower invertebrates. Included in the above figures are 298 specimens of mammals, birds, and reptiles preserved for anatomical study or as skeletons. Accessions by gift total 19,254 specimens, by exchange 562, by Museum expeditions (or other collecting by the staff) 11,536, and by purchase 42,207.

Notable gifts of mammals include numerous specimens received from the Chicago Zoological Society; a mounted grizzly bear from Mr. F. N. Bard, of Chicago; a mounted head of the Marco Polo wild sheep from Mr. James Simpson, Jr., of Chicago, and a small collection of excellently prepared study skins from Colorado, presented by Mr. John M. Schmidt, of Homewood, Illinois. Fromm Brothers, who operate the well-known fur farm at Hamburg, Wisconsin, presented the Museum with five specimens of foxes representing the typical silver, black, cross, and red foxes familiar as furs. It is intended to prepare an exhibit of these as a separate case, with the addition of the Arctic white and blue foxes.

The principal gifts of birds were 522 specimens from the Mexican State of Oaxaca, presented by Mr. Boardman Conover, and about 1,000 specimens from Dr. Louis B. Bishop, of Pasadena, California. Collections of fishes from the Chicago region, amounting to 8,984 specimens, were presented by Messrs. Robert Haas and Loren P. Woods, of Chicago. Notable gifts of insects were 2,409 specimens from Mr. Emil Liljeblad, of Villa Park, Illinois, former Assistant Curator in the Division of Insects; 970 beetles from Europe and Peru from Professor J. Soukup, of Lima, Peru, and 169 specimens from Dr. Charles H. Seevers, of Chicago.

Noteworthy additions to the collection of skeletons and to the series of specimens preserved especially for anatomical studies came mainly from the Chicago Zoological Society. Valued specimens were received also from the Lincoln Park Zoo.

Exchanges were made during 1940 with the principal American museums of natural history, and with various individuals.

Purchases include noteworthy additions to the reference collections of birds from Bolivia, West Africa, and Australia; a collection of amphibians and reptiles from Mexico, purchased from Dr. Harry Hoogstraal, of Urbana, Illinois; and two large sharks for exhibition models.

Two notable purchases greatly increased the insect collection. One of these is a special collection of beetles of the family Histeridae (on which family Assistant Curator Wenzel is a recognized authority), amounting to about 15,000 specimens. Such collections, built up in the course of their studies by specialists who assemble specimens from all quarters of the world, are of great scientific value and it is important that they should find their way into the permanent collections of the larger museums. The second large purchase of insects represents fresh material, collected by Mr. Henry Dybas in Mexico in the summer of 1941. It is rich in the interesting beetles of the family Ptiliniidae, which includes some of the smallest insects.

CATALOGUING, INVENTORYING, AND LABELING—ZOOLOGY

The entries in the Departmental catalogues number 12,957; of these 895 were for mammals, 5,796 for birds, 2,967 for reptiles, 2,519 for fishes, 26 for anatomy, and 1,654 for lower invertebrates.

During the first six months of the year, with the aid of the WPA, 1,061 sets of eggs were packed and labeled. Much work was involved in the unpacking of the large collections received during the year. The collections of reptiles on the fourth floor (East Gallery) were completely inventoried and labeled by Mr. Pope. Mr. Pope has made much progress in identifying, labeling, and shelving accumulated Asiatic and South American collections. Mr. Woods continued a program of re-labeling the reference collections of fishes. The collection was found to be in need of a change of alcohol, due to deterioration by evaporation and solvent action on oils in specimens. This change is accomplished in an economical way by redistillation of the old alcohol; more than 650 gallons were so reclaimed during the year, from an original 950 gallons changed. Good progress was made in the cataloguing of the more important segments of various

collections accumulated by the Division of Fishes. In the Division of Anatomy (which catalogues its specimens mainly in the catalogues of other Divisions), the card index of such material was kept up to date by a total of 317 entries.

So far as possible all new acquisitions in the Division of Insects were given the attention needed to render the specimens accessible for study and to insure their permanent preservation. Some 6,650 specimens were pinned, 5,000 were pin-labeled, and 3,200 were sorted, labeled, and preserved in alcohol. A limited amount of time was devoted to assembling and determining scarabaeid beetles in order to advance the rearrangement of the collection of North American beetles. At least 2,000 histerid beetles were also pinned, classified, and arranged in new unit-trays that are now being used for certain orders of insects.

In the Division of Lower Invertebrates, about 1,200 numbers of the old shell collection, comprising some 12,000 specimens, have been revised. New material, corresponding to the 1,654 catalogue entries for the Division, has been labeled and placed in the permanent collection.

INSTALLATIONS AND REARRANGEMENTS—ZOOLOGY

Important additions and changes were made in the hall containing the systematic collection of mammals (Hall 15). The exhibit of wild pigs was enlarged to occupy two cases by the addition of a European wild boar, African red river hog, Abyssinian bush pig, Philippine pig, and the remarkable babirusa of Celebes. The specimen last named is a cellulose-acetate reproduction by Staff Taxidermist Leon L. Walters; the others are mounted skins, the work of Staff Taxidermist Julius Friesser. An unsatisfactory mount of a grizzly bear and cub were replaced by the fine specimen collected and presented by Mr. F. N. Bard, of Highland Park, Illinois, which had been mounted by Mr. Friesser. The case containing a llama, alpaca, and vicuña was removed from exhibition.

Exhibition work in progress for the Division of Mammals includes an exhibit of enlarged models of bats by Mr. Walters, aided by Mr. John Erker; two new screens representing the mammals of the Chicago region by Staff Taxidermist W. E. Eigsti, and a series of models for a hall of whales by Staff Taxidermist C. J. Albrecht. The panoramic background for a habitat group of gibbons, painted by Mr. Arthur G. Rueckert, Staff Artist, was finished in December.

Two screens were added to the series of exotic birds in Hall 21, exhibiting many specimens of diverse families that fill gaps in the



HABITAT GROUP OF GREEN PEAFOWL IN INDO CHINA

The specimens are a gift from Dr. Wilfred H. Osgood, Curator Emeritus of Zoology, who collected them on an expedition he personally sponsored and conducted.

Prepared by John W. Meyer, Frank H. Leith, and Arthur G. Rueckert
Hall of Birds (Hall 20)

series on exhibition. These mounts are the work of Staff Taxidermist John W. Moyer.

A habitat group of green peafowl was completed and installed in Hall 20 in the series of groups that show the environments and range of ecological conditions under which birds live throughout the world. The specimens, together with accessories, were collected by Dr. Wilfred H. Osgood in Indo-China and presented by him to Field Museum. The group shows a pair of the birds aroused at dawn from their roosting perches in a dead tree overtopping the tropical forest. In the background the early morning mist is lifting from low areas in the terrain and a rosy glow pervades the sky. This species of peafowl, less widely distributed and not so well known as the common Indian species, is in a subtle way the more gorgeously colored. The train of the male, shown to advantage in the habitat group, is fully as large and extensive as that of the common species. The plumage of the body and neck is rich, lustrous, bronzy green, each feather delicately laced with an edging of velvety black. The birds in this group were prepared by Staff Taxidermist Moyer; the accessories and installation are by Mr. Frank H. Letl, Preparator of Accessories, and the background is by Staff Artist Rueckert.

The principal additions to Albert W. Harris Hall (Hall 18) consist of an alcove case of enlarged models of tadpoles designed to demonstrate what a tadpole is, and make clear the extraordinary fact that evolution of the tadpole stage proceeds independently of evolution of the adult frogs. Frogs that are apparently very much alike in general appearance may have tadpoles of extremely different types. The models display tadpoles that are adjusted to life in mountain streams, with suction devices for holding to the rocks; surface film feeders with extraordinary flower-like mouths, and bottom feeders of various types. These models are the work of Mr. Letl and Mr. Joe Krstolich, Artist-Preparator, and represent a most important adaptation of modern plastics to the preparation of museum models. The group representing the American crocodile at Lake Ticamaya, Honduras, was moved to its permanent place in Hall 18, with a new background by Mr. Rueckert. Reinstallation, which required remaking of the foreground and a rearrangement of the specimens, occupied Mr. Walters and Mr. Rueckert for some time in the early part of the year.

The entire exhibition series of fishes, removed from Hall 18, was reinstalled in a room now designated as the Hall of Fishes (Hall O) on the ground floor. The old alcove arrangement for the

exhibition of specimens in the "systematic series" has been replaced by built-in wall cases. It is now possible for the visitor to get a connected picture of the variation of fishes from the most primitive species, such as the lampreys and their relatives, to the more advanced forms, such as the sea basses, scorpion fishes, trigger fishes, swell fishes, and angler fishes. Old, faded, and otherwise unsuitable specimens have been replaced by newly prepared material, with consequent great improvement in the appearance of the series as a whole. The especially interesting case of sharks, rays, and chimaeras is supplemented by a mounted whale-shark some twenty-five feet long, representing a young specimen of this species collected at Acapulco, Mexico, by Messrs. Spencer W. Stewart and Robert J. Sykes, of New York, and presented by them to the Museum. The specimen was mounted by Staff Taxidermist Friesser, aided by Assistant Taxidermist Frank C. Wonder.

Part of the space in Hall O is occupied by habitat groups in which an attempt is made to reproduce some of the natural conditions under which fishes live, and show some of the plants and animals with which they are associated in their daily occupations.

At the west end of the hall is a large colorful group showing conditions at the edge of a Bahaman coral reef when a school of tiger sharks comes dashing along in search of food. The commotion produced by the passage of the sharks drives nearly every small fish to a safe hiding place in the coral. This group results from studies and collections made by the Williamson-Field Museum Undersea Expedition of 1929.

Other groups show conditions off the sandy shores of southern Texas and along the rocky coast of Maine. The Texas group shows how oysters build up large rock-like "lumps" on sandy coasts where there is very little opportunity for young shells to attach themselves to rock or other solid substratum.

The Maine group shows rocks below the surface covered by a luxuriant growth of brilliantly colored plants and animals, very different from the barren conditions above the protecting influence of the water. The Maine and Texas coast groups result from Museum expeditions by Mr. Alfred C. Weed, Curator of Fishes, and Mr. L. L. Pray, Staff Taxidermist, in 1924 and 1937.

Specimens are in preparation for a similar group to show conditions as they exist along the lava cliffs of the Galapagos Islands. Brilliantly colored fishes, crabs, and other animals will be shown in their natural environment.

The habitat groups of fishes and the models in the systematic series are largely the work of Staff Taxidermist Pray; the accessories are by the Division of Group Accessories under the direction of Mr. Leil.

Some rearrangement of exhibition cases of skeletons in Hall 19 was necessitated by plans for the development of an alcove installation consisting of four cases to form a general exhibit illustrating animal reproduction. Two of these cases had been installed at the end of the year, and it is planned to complete and open this exhibit early in 1942. The exhibit results from a gift to the Museum made by the late Charles H. Schweppe, of Chicago.

Plans for exhibition cases of insects, to fill the space in Hall 18 vacated by the removal of the fishes to their special hall on the ground floor, are well advanced. Two cases, illustrating North American and exotic butterflies and moths, will be finished early in 1942.

An important improvement in several halls of the Department of Zoology consists in adapting the cases of Hall 18 (Reptiles), Hall 19 (Anatomy), and Hall 13 (Hoofed Mammals) to individual case lighting, with fluorescent lights. The reduced reflections, better lighting of individual specimens, and improved general appearance of the halls are highly gratifying.

N. W. HARRIS PUBLIC SCHOOL EXTENSION

Continued growth in all of its established functions was shown by the Harris Extension in 1941. The number of schools receiving portable Museum cases increased by ten to reach a new high total of 495. Although approximately half a million children are enrolled in the schools served, it is not possible to make a valid estimate as to the proportion of them actually reached through this phase of the school extension services of Field Museum. The methods of using the exhibits vary from school to school, and the collecting of statistical information is thus made impracticable. In some schools the cases are taken to every classroom; in others, a more restricted circulation is the rule. In social settlements, boys' clubs, and similar organizations receiving Harris Extension cases, it would be even more difficult to determine the percentage of children in attendance who pause to examine the exhibits. However, many complimentary letters of appreciation, received from teachers and principals, are testimony to the value of the portable exhibits as aids in the teaching of science in the schools.

Resources in material for the preparation of exhibits, or for lending separately, were increased by gifts, transfers from the scientific departments of the Museum, and some collecting by members of the staff of the Harris Extension. Mrs. Charles B. Cory, of Chicago, gave 142 insects in individual Denton mounts, and 157 mounted pressed plants. Articles pertaining to northern South America, and some Eskimo artifacts, were received from the Department of Anthropology; soy beans and soy bean products were received from the Department of Botany; numerous rock and mineral specimens were received from the Department of Geology, and twenty-eight models of fishes were received from the Department of Zoology. Twenty-nine bird skins, fifteen small mammal skins, and numerous insects were prepared and added to reserve collections by the staff.

Thirty-three new exhibits were prepared, and eight old exhibits were completely reinstalled. Two cases on the subject of coloration in birds were made. One illustrates the seasonal changes in appearance of some common birds, and the other directs attention to the differences in plumage associated with sex. Cases showing the nesting habits of the robin and also the bluebird were made. Fifteen exhibits in the field of geology were completed. These include five cases with models showing the supposed structure of the earth's interior, five with diagrammatic models showing some major features of volcanism, and five with simplified arrangements of igneous rocks and the principal rock-forming minerals.

Exhibits intended to aid in the teaching of those subjects which are now broadly grouped by teachers under the general term "social studies" were augmented by the installation of ten cases of Eskimo material in duplicate series of five cases. Each case of the series deals with a different aspect of Eskimo life. Guatemalan children's clothing, carefully selected and purchased in Guatemala through the courtesy of Miss Elizabeth McM. Hambleton of the Raymond Foundation staff, was installed in four cases. Twenty-two cases are available in what may be called an anthropological series, now added to the botanical, geological, and zoological series which have been long-established subdivisions of subject matter in Harris Extension cases.

Seventeen pairs of cases were delivered to each of the schools and other Chicago institutions receiving the Museum service for the entire year. In addition, sixty-four requests for specific cases or materials were filled. This number is larger than reported in

previous years, and analysis of the kinds of material requested has some significance. Of the sixty-four special loans, ten were for standard cases only. But of the ten loans, six, involving forty-four cases, were made to organizations which used the cases for display or to provide a general atmosphere of interest to children. Only four special loans, comprising nine cases, should be considered as having been used directly for teaching purposes.

By contrast, fifty-four loans of study collections of objects which could be handled by children, were made to schools through teachers or pupils who called in person at the Museum to secure the material. In these instances, the borrowers were given individual attention and help in the selection of illustrative material for particular units of study. Bird study-skins were most in demand, pressed plant specimens next, while insects, and rocks and minerals ranked third, equal numbers of loans being made in each of the last two classifications. The actual figures are in the ratio of 2 to 1.4 to 1.

Since units of study in science tend to be seasonal, it is not expected that lending study collections will more than partially solve the problem of providing teachers with visual aids in the form of Museum materials at times when they will be most useful. If all of the schools simultaneously were to require from the Harris Extension such visual aids (which are now available only to a limited extent), the demand could not be met with present resources or with any reasonably planned increase possible in the future.

The two Museum trucks traveled a total of 11,996 miles without mishap or delay in the circulation of exhibits. An interesting observation which may be made with respect to truck mileage is that the growth in the number of schools reached over a period of fifteen years has not appreciably increased the amount of driving necessary to serve them. In 1926, when 371 schools were receiving cases—124 less than now—the reported annual mileage was 11,734 for a period of service seven school days less than in 1941. The explanation for this apparent anomaly is fairly obvious. Once truck routes embracing the whole city have been established, punctuating those routes with additional stops does not add to the distance traveled.

All necessary work to keep the trucks in good mechanical condition and preserve their appearance was done as the need arose, particularly during the non-operating period of the summer vacation of the schools.

The amount of damage to cases directly due to accident, or careless handling in any particular school, was not great and manifests no discernible trend. Less glass and fewer sliding label frames were broken, but there was more injury to case woodwork. The total number of cases damaged in schools was fifty-eight, or nearly six per cent of the number of cases in circulation. During the year, however, mechanical repairs were made on 399 cases, or nearly one-third of the entire inventory of Harris Extension cases.

New bottoms were fitted to sixty-six cases, hanger strips were added to seventy-three cases, and auxiliary label guides to 108 cases. Entire new back assemblies were made for eleven cases. Among other kinds of repairs made, the biggest item was sliding label frames, of which 268 needed attention. Much of the repair work required was not the result of one season of circulation, but must be attributed to accumulated wear over a period of years. Twenty-one exhibits, which had not been in active use for several years, were retired, and reconditioning of the cases was begun.

A circular saw and a drill press were added to the equipment of the Department to facilitate the performance of many mechanical operations which were formerly done by hand.

During the first six months of the year, Work Projects Administration employees provided clerical assistance in the organization and indexing of reserve collections, as well as manual assistance in reconditioning old portable cases for further use, and in the production of numerous parts for various models scheduled for completion in the future. A WPA artist painted backgrounds for the reinstallation of six cases of the habitat type.

THE JAMES NELSON AND ANNA LOUISE RAYMOND FOUNDATION FOR PUBLIC SCHOOL AND CHILDREN'S LECTURES

The Raymond Foundation in 1941 conducted its customary activities, which evoked a notable response from school authorities, teachers, and children. The various types of programs which have proved successful in past years as entertainment and as supplementary education were continued both in the schools and at the Museum. These included the regular spring, summer, and autumn series of free motion picture programs for children, presented in the James Simpson Theatre, and also two special patriotic programs; guide-lecture tours in the exhibition halls; seven series of special

science programs; six radio follow-up programs, and extension lectures given in the classrooms and auditoriums of schools.

The Foundation staff has again made a special effort to take care of the greatest possible number of the requests received for lectures and tours in the Museum. These reach their peak during the months of April, May, June, October, and November because the weather in those months encourages many groups to travel even hundreds of miles to visit Field Museum and other cultural institutions. During the period from early December to the end of March, when the Museum is less accessible to many groups, the staff lays greater stress upon the extension service in which lecturers go out to the schools. Beginning in September, 1941, each Chicago school, public and private, was offered one lecture. After all requests covering the school year 1941-42 are filled, second lecture requests will be granted if time permits.

ENTERTAINMENTS FOR CHILDREN—RAYMOND FOUNDATION

Three series of motion picture entertainments and two special patriotic programs were arranged for the young people of the community. The programs were as follows:

SPRING COURSE

- March 1—"Cloudy and Colder—Probably Snow" (The story of weather).
Cartoon—"Fun on Ice."
- March 8—"Four Feet and Fur" (Animals tamed and untamed).
Cartoon—"Busy Beavers."
- March 15—"Nature on the Wing" (Birds and bugs).
Cartoon—"A Little Bird Told Me."
- March 22—"The Song of China" (A picture produced in China with Chinese cast).
- March 29—"Animal Life of the Swamps" (Insects, birds, and mammals).
Cartoon—"Night."
- April 5—"The Forest" (A picture in celebration of Arbor Day).
Cartoon—"Springtime Serenade."
- April 12—"Balancing Nature's Budget" (A story of conservation).
- April 19—"Sudan" (Life in the heart of Africa).
- April 26—"A Day at Brookfield Zoo."
Cartoon—"Along Came a Duck."

SUMMER COURSE

- July 10—"The Adventures of Chico" (Story of a Mexican Boy).
- July 17—"Exploring and Collecting in Forest, Field and Stream" (Narration by William Hassler, with colored motion pictures).
- July 24—"Summer Time in the North Woods" (Animals and birds).
Also a cartoon.
- July 31—"To the South Seas with Zane Grey."
Also a cartoon.
- August 7—"A Western Vacation in the Ranch Country" (Yosemite National Park and the Grand Canyon—Courtesy of Santa Fe Railroad).
Also a cartoon.
- August 14—"Tundra" (An Arctic adventure).

AUTUMN COURSE

- October 4—"Indian Lore, Life and Culture" (Narration by Charles Eagle Plume; illustrated with dancing and costumes).
 October 11—"The Spirit of the Plains" (A story of the region west of the Mississippi).
 Also a cartoon.
 October 18—"Adventures in the Far North" (Birds, animals, and people).
 October 25—"South America" (Things used daily in our country—rubber, coffee, chocolate, etc.).
 November 1—"Mexico, Our Southern Neighbor."
 Also a cartoon.
 November 8—"Life in Our Southwestern Desert."
 Also a cartoon.
 November 15—"Wild Animals" (Narration by Sam Campbell—courtesy of the Chicago and North Western Railway Company).
 November 22—"Canada, Our Northern Neighbor."
 Also a cartoon.
 November 29—"The River Nile, Egypt's Life Line" (From the time of the mummies to the present).

The following two special patriotic programs were offered in addition to the aforementioned series of entertainments:

February 12—Abraham Lincoln Program.

February 22—George Washington Program.

In all, twenty-six motion picture programs were given in the James Simpson Theatre. Of these, twenty were repeated at a second showing, which brings the total of programs given to forty-six. Combined attendance at these numbered 28,798 children. Of this number, 9,425 attended the spring course, 5,239 the summer course, 11,151 the autumn series, and 2,983 the special patriotic programs.

The programs were given publicity in the *Chicago Daily News*, *Chicago Tribune*, *Chicago Herald-American*, *Chicago Daily Times*, and *Downtown Shopping News*, as well as in many neighborhood and suburban papers.

FIELD MUSEUM STORIES—RAYMOND FOUNDATION

Two new series of *Field Museum Stories for Children*, written by members of the Raymond Foundation staff, were published. Line drawings and photographs were used to illustrate the stories. Subjects of the stories and the pictures correlated with films shown on the programs, or were chosen for their seasonal interest. Following are the titles of the stories in each series:

Series XXXVI—Snow, a Blanket for the Earth; The Skunk and Its Habits; Woodpeckers; China Moves Along; Life of the Mayfly; Arbor Day; The Redwood Trees; A Day with the Pygmies of Africa; Primitive Snakes: Boas and Pythons.

Series XXXVII—Wigwams of the Woodland Indians; The American Bison or Buffalo; Arctic Giants—Polar Bears; Rubber from America; Mexican Maguays; The Horned Lizard; The White-tailed Deer; Cod-fishing off Canada; Egypt and the Nile.



A GROUP OF AMERICAN CROCODILES SUNNING ON A ROCKY RIVER

Scene at Lake Tzucmaya Honduras

Photography by Leon L. Walters background by Arthur G. Ruckert

Albert W. Harris Hall (Hall 18)

A total of 25,000 copies of *Museum Stories* was distributed to the children who attended the Saturday morning programs.

LECTURE TOURS FOR CHILDREN—RAYMOND FOUNDATION

The use of exhibition halls for classroom work was extended to the following groups by means of conducted tours:

	Number of groups	Attendance
Tours for children of Chicago schools:		
Chicago public schools	325	13,658
Chicago parochial schools	27	1,108
Chicago private schools	11	245
Tours for children of suburban schools:		
Suburban public schools	397	13,810
Suburban parochial schools	20	323
Suburban private schools	8	131
Tours for special groups of children:		
Children's clubs	16	352
Special science programs	132	5,815
Miscellaneous	64	4,864

Guide lecture service was thus given to 1,000 children's groups, and the aggregate attendance was 39,806.

Several of the schools and groups receiving this service were also given illustrated talks and discussions in the lecture hall in advance of the tours in the exhibition halls. The background for a better understanding of the exhibits was provided by these talks and the accompanying pictures. There were 56 such lectures given, with an attendance of 6,157.

As in past years, many groups came from outside Chicago and Illinois. Especially during the months of April, May, June, September, October, and November these groups from out of the Chicago metropolitan area make use of the Museum. Tours were given for 377 such groups, comprising 11,164 persons. One group of eighth grade pupils from Detroit was of unusual interest. A greater part of their year's course of study had been based upon materials and facilities provided in this and certain other institutions. They spent several days in Chicago. During the months prior to coming here, preparation had been made by adjusting the course of study to co-ordinate with this plan. Leaflets on certain Field Museum exhibits and post cards had been obtained in advance and used in classroom work. Participation in the trip was voluntary, and each pupil in the party had been required to earn at least one-half of his total expenses. The purpose of the trip was to present an

introduction to various new phases of life, and to offer the children opportunity to begin trying the solution of problems away from home.

On December 2 and 4 the Museum was host to parties of some 900 boys and 700 girls from among the delegates to the National Congress of 4-H Clubs. An introductory lecture was given for them in the Theatre, after which they explored the Museum in accordance with their own interests, aided in finding the exhibits they sought by Museum staff guides and special mimeographed floor plans.

SCIENCE PROGRAMS—RAYMOND FOUNDATION

Again Field Museum offered special science lectures, tours, and supplementary materials to the schools because of the emphasis placed on science in the school curriculum. The programs offered are as follows:

April and May:

Conservation—The conservation of natural wild life, with emphasis on that of the Chicago region (for 6th grade).

Bird Migration—The story of migration of birds told with pictures and Museum exhibits (for 5th grade).

Bird Study—A general survey of the habits of birds with emphasis on those of the Chicago region (for 5th grade).

Wild Flowers of the Chicago Region—A survey of the wild flowers of the forest preserves, dunes, swamps, prairies and roadsides (for 4th and 6th grades).

October and November:

Living Trees (for 5th and 6th grades).

America the Beautiful (for 7th and 8th grades).

Stories of Rocks (for 5th and 6th grades).

Illustrated lectures in the Museum Lecture Hall and Theatre, followed by directed study in the exhibition halls, were the chief features of these programs. The students were provided with sheets of questions and suggestions, and were assigned to the task of finding the answers from the exhibits. The Raymond Foundation staff assisted them in the work.

Gratifying success was achieved by these programs, and, in answer to demands for more than the twenty-two programs originally offered, it became necessary to give ten additional ones. Groups from 102 schools came to the Museum to participate in the programs. Included were eighty-five Chicago public, eleven Chicago parochial, and six suburban public schools. The total attendance at the thirty-two lectures was 5,327; of this number, 5,293 were divided into 120 groups for supervised study and work with the exhibits and question sheets.

An additional unannounced lecture on museum organization was given by request to seven audiences aggregating 522 persons. These students were then divided into twelve groups for work in the exhibition halls. Thus there were, in all, thirty-nine science lectures, attended by 5,849 persons, and 132 follow-up tours participated in by 5,815 persons.

RADIO FOLLOW-UP PROGRAMS—RAYMOND FOUNDATION

Co-operation was again extended by the staff of the Raymond Foundation to the Chicago Public School Broadcasting Council. Two series of programs were presented as follow-ups to radio broadcasts given by the Council. Museum exhibits which correlated with the subjects of the broadcasts were featured in these programs. Stereopticon slides were shown, and objects were made available for the students to handle, at meetings held in the Lecture Hall. Mimeographed information sheets were distributed, and questions were answered in the course of informal discussion. The meetings were followed by tours in the exhibition halls. The subjects were as follows:

Chicago Birds; Hunters and Fishers of the Northlands; Swallow-tail butterflies; Forest Products; Farmers, Shepherds and Acorn Eaters; How Forests Are Formed.

Total attendance was 529.

EXTENSION LECTURES—RAYMOND FOUNDATION

Extension lectures, illustrated with slides, were given in classrooms, laboratories and assemblies of Chicago public and private schools. When time permitted, open discussions followed in which teachers and students were invited to participate with questions and ideas. The following subjects were offered to high school groups:

BOTANY: Plant Life of the Chicago Region; Plant Formations of Different Kinds of Places; Plants as Barometers of Environmental Conditions; One Plant Society Follows Another in a Region (causes and order of plant successions); Plants as Conservationists; Plants Are of Economic Value to Man; The Origin, Development and Structure of Plants.

ZOOLOGY: Animals—From Amoeba to Man; Environment Affects Animal Life; Distribution and Adaptative Radiation of Animal Life; Animals of Economic Importance; Animal Life of the Chicago Region; The Birds of the Chicago Region; Insects Affect the Welfare of Man; Wildlife Conservation.

GEOLOGY: A Rock May Be a Treasure Chest; Minerals of Economic Value; The Changing Earth; The Story of Soil; The Geography of the Chicago Region; The Relief Features of the Earth; The Fossil Story of Prehistoric Life.

ANTHROPOLOGY: The Story of Prehistoric Man; Ancient Civilizations of the Old World; Ancient Civilizations of the New World; Contemporary Primitive Peoples; North American Indians.

MISCELLANEOUS: The Work of Field Museum; The Conservation of Natural Resources.

The following subjects were offered to elementary school groups:

Caribbean Lands; South America; The Egyptians; The Story of Africa; Prehistoric Peoples; The Story of Clothing; North American Indians; Indians of the Woodlands and Plains; Nature in City Yards and Parks; China and Her People; Migisi, The Indian Lad; Our Outdoor Friends; Exploring the Woods in Autumn; Winter in the Woods; Signs of Spring in the Forests and Meadows; Summer Comes to the Countryside; Trees of the Chicago Region; Flowers of the Chicago Region; Birds of the Chicago Region; Mammals of the Chicago Region; Geography of the Chicago Region; Insects—Friends and Enemies; Animals of the World at Home; The Changing Earth; The Work of Wind and Water; A Rock May Be a Treasure Chest; Plants and Animals of Long Ago; The Adventures of a Great Museum; What Will the Great Out-of-Doors Be Like 100 Years from Now; The Navajo and Pueblo Indians; Mexico, Land of the Feathered Serpent.

The extension lectures given by the staff of the Raymond Foundation totaled 441, and the aggregate attendance was 154,562. This service was given as follows:

	Number of lectures	Attendance
Chicago elementary schools.....	382	132,201
Chicago high schools.....	46	21,860
Chicago private schools.....	2	155
Other organizations.....	11	346

TELEVISION PROGRAM—RAYMOND FOUNDATION

Field Museum again participated in an experimental television program. By invitation of the manager of Station W9XBK, the Raymond Foundation staff was enabled to place Field Museum both aurally and visually "on the air." The program featured Mr. Bryan Patterson, Assistant Curator of Paleontology, who assisted the Foundation in presenting the story of prehistoric animals.

ACCESSIONS—RAYMOND FOUNDATION

For use in the Theatre, Lecture Hall, and in extension lectures, the Raymond Foundation acquired 18 slides by purchase from the American Museum of Natural History; 9 slides by purchase from the National Geographic Society; and 391 slides made by the Division of Photography. Of these standard size slides, 260 were colored by the Museum Illustrator. The collection of 2 x 2 inch slides is also being built up, 324 slides of color photographs having been purchased. Gifts received include 16 color photographs from Mr. Robert Yule, of the Department of Anthropology, and 47 from Mr. John W. Moyer, Staff Taxidermist.

LECTURE TOURS AND MEETINGS FOR ADULTS—RAYMOND FOUNDATION

Guide-lecture service was made available, without charge, to special parties from colleges, clubs, and other organizations, in addition to the regular service provided for the general public.

THE INTERIOR OF THE EARTH

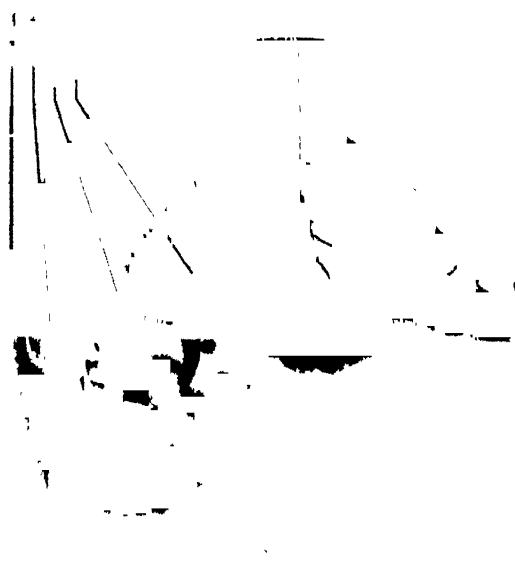
When we see the earth? Is there a solid core and a liquid? The answer is that it is not so simple as it seems. The earth is not a solid ball of iron and rock, but a complex of layers of different materials. The outermost layer is the crust, which is thin and brittle. Below it is the mantle, which is much thicker and hotter. At the center is the core, which is the hottest and most dense part of the earth.

From the holes or of subaqueous shells, some of the most interesting and important of the earth's interior is the mantle. The mantle is the largest layer of the earth, and it is the source of most of the heat that drives the earth's internal processes. The mantle is divided into two main parts: the upper mantle and the lower mantle. The upper mantle is the part closest to the crust, and it is the source of most of the heat that drives the earth's internal processes. The lower mantle is the part further from the crust, and it is the source of most of the heat that drives the earth's internal processes.

THE INTERIOR OF THE EARTH

There are still many things we do not know about the interior of the earth. We know that the earth is not a solid ball of iron and rock, but a complex of layers of different materials. We know that the outermost layer is the crust, which is thin and brittle. Below it is the mantle, which is much thicker and hotter. At the center is the core, which is the hottest and most dense part of the earth. We know that the mantle is the largest layer of the earth, and it is the source of most of the heat that drives the earth's internal processes. We know that the mantle is divided into two main parts: the upper mantle and the lower mantle. We know that the upper mantle is the part closest to the crust, and it is the source of most of the heat that drives the earth's internal processes. We know that the lower mantle is the part further from the crust, and it is the source of most of the heat that drives the earth's internal processes.

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SMITHSONIAN INSTITUTION

PORTABLE NATURAL HISTORY EXHIBIT FOR CHICAGO SCHOOL
Prepared by the N. W. Harris Public School Extension of Field Museum
One-sixth actual size

The regular public tours were continued on week days (except Saturdays) at 2 P.M. as in past years; and during July and August additional tours were given at 11 A.M. The monthly schedules of these tours are printed and distributed at the entrances of the Museum. The tours given for the public numbered 280, and the total attendance was 4,299 persons. Special tours were given for fifty-four college groups composed of 1,643 persons; and for forty-six other organizations with attendance of 1,593, making a total of 380 tours for adults with an aggregate attendance of 7,535.

The Raymond Foundation assisted in program details for the commencement exercises held on June 19 for 1,163 foreign-born adults who had completed special courses in the public schools of Chicago. The James Simpson Theatre was made available to the Board of Education for this purpose.

SUMMARY OF ATTENDANCE AT ENTERTAINMENTS, LECTURES, ETC.—
RAYMOND FOUNDATION

Including both intra-mural and extra-mural activities of all the types conducted by the Raymond Foundation, a total of 1,969 groups, composed of 244,399 persons, was reached with education and entertainment in one form or another.

LECTURES FOR ADULTS

The Museum's seventy-fifth and seventy-sixth courses of free lectures for adults were presented in the James Simpson Theatre on Saturday afternoons during the spring and autumn months. As in past years they were illustrated with motion pictures and stereopticon slides. Following are the programs of both series:

SEVENTY-FIFTH FREE LECTURE COURSE

- March 1—Headhunters Still Live.
Douglas Oliver.
March 8—Blue-green Water.
Wesley Mueller.
March 15—Malay-Utan.
Joseph Tilton.
March 22—The Leopard of the Air.
Captain C. W. R. Knight.
March 29—Northwest Passage Patrol.
Richard Finnie.
April 5—Birds and Animals of the Rockies.
Edgar Hoff.
April 12—Ancient America's Most Civilized People.
J. Eric Thompson.
April 19—Life in a Tropical Rain-Forest.
Dr. Ralph Buchsbaum.
April 26—An Alaskan Adventure.
Bradford Washburn.

SEVENTY-SIXTH FREE LECTURE COURSE

- October 4—The Netherlands East Indies.
Dillon Ripley.
- October 11—American Holiday with Wild Life.
Dr. Gustav Grahn.
- October 18—Along Alaska Trails.
A. Milotte.
- October 25—Hunting for Walrus in the Ice Floes.
Carl Dreutzer.
- November 1—From Seashore to Glacier.
Karl Maslowski.
- November 8—New Worlds Undersea.
Vincent Palmer.
- November 15—Florakeys.
James B. Pond.
- November 22—Pan American Highway.
James Sawders.
- November 29—Through the Rainbow.
Stuart D. Noble.

The total attendance at these eighteen lectures was 17,224, of whom 8,685 attended the spring series and 8,539 the fall series. Included in these audiences were 2,140 Members of the Museum who, by their memberships, are entitled to reserved seats for themselves and a companion.

LAYMAN LECTURES

The novel Sunday afternoon lectures presented in the Museum since 1937 by Mr. Paul G. Dallwig, The Layman Lecturer, were continued in 1941, and attracted greater attendance than in any previous year. Mr. Dallwig gave thirty regular lectures for the general public, and one for a special group (members of the American Gem Society who came shortly after the reopening of H. N. Higginbotham Hall of Gems and Jewels). At these thirty-one lectures the aggregate attendance was 3,264, an increase of more than 400 over the number composing the audiences of the preceding year. The size of the groups on these lectures has to be rigidly limited because of practical considerations in conducting the parties through the exhibition halls which Mr. Dallwig uses to illustrate his lectures. Therefore, as in the past, the Museum has had to require persons wishing to participate to make reservations in advance. Usually such reservations were necessary several weeks in advance, and even so it was found imperative to modify the limitations on the size of the parties, so that the average group each Sunday numbered 105 hearers. The physical limitations imposed by the conditions attendant on presentation of this type of lecture made it impossible at first to meet more than about one-half of the demands for

reservations, but by presenting parts of the lectures in the lecture hall, and by temporarily shifting exhibits in some halls to provide more space for listeners, about 75 per cent have been accommodated.

Mr. Dallwig's lectures have proved to have a special appeal to audiences composed for the most part of very discriminating types of people. The records show that those who have attended are predominantly drawn from such classes as business executives, educators, students, journalists and other writers, physicians, lawyers, men and women engaged in a variety of professions, and others with a natural leaning toward interest in cultural subjects.

The unique feature of Mr. Dallwig's lectures, which distinguishes them from most similar presentations, is the manner in which he dramatizes his subjects while at the same time interpreting science with complete accuracy based upon thorough research. Mr. Dallwig engages in this activity purely as a hobby and as a contribution to the promotion of scientific knowledge. He receives no compensation either from the Museum or from his audiences. The popularity he has attained, increasing each year, is notable, and in addition to serving the public his activity has proved to be a large factor in publicizing the Museum as an institution, and drawing attention to its activities in general. Since Mr. Dallwig's first lectures at the Museum in October, 1937, he has spoken before audiences totaling 12,265 persons.

During the seven months of 1941 in which Mr. Dallwig made his lecture appearances at the Museum, his subjects were as follows:

January	(four Sundays)—Digging Up the Cave Man's Past.
February	(four Sundays)—Nature's "March of Time."
March	(five Sundays)—Gems, Jewels, and "Junk."
April	(four Sundays)—The Romance of Diamonds.
May	(four Sundays)—The Parade of the Races.
November	(five Sundays)—Gems, Jewels, and "Junk."
December	(four Sundays)—Mysterious "Night-Riders" of the Sky.

SUMMARY OF ATTENDANCE AT LECTURES, ETC.

Instruction, entertainment, or similar services were made available by the Museum during 1941 to a total of 2,018 groups comprising an aggregate attendance of 264,887 individuals. Included in these figures are all those reached through the varied activities of the James Nelson and Anna Louise Raymond Foundation (1,969 groups, 244,399 individuals); the 17,224 persons who attended the eighteen Saturday afternoon lectures for adults in the James Simpson Theatre, and the 3,264 persons who participated in the thirty-one Sunday groups before whom the Layman Lecturer appeared.

LIBRARY

The Library's new reading room, more conveniently located than the old one, with improved lighting, more efficient arrangement, and other facilities adding to its usefulness and to the comfort of readers, was completed in 1941. Plans for this improvement have been under consideration for several years, and actual construction was begun in the latter part of 1940.

The change was accomplished by reconstructing and refurnishing the former stack room as a reading room, and moving the book stacks into the former reading room. During the months this work was in progress, there was no interruption to the Library's services to scientists and to the public in general—a fact in which considerable pride is taken, as its accomplishment presented many difficulties due to the magnitude of the operation.

The new reading room is easily reached by visitors arriving at the third floor as the entrance is close to the passenger elevator landing. Effective and agreeable lighting for readers has been provided by installation of an entirely new system of fluorescent illumination from coves around a new lowered ceiling. This type of lighting is a distinct innovation which, it is believed, will be found of interest by other libraries. The new drop ceiling improves the general appearance of the room, as well as providing needed insulation. New service counters, new office space for the librarians, and a new rubber tile floor covering in a color harmonizing with the furnishings, all help to make the new reading room attractive and quiet, and add to the efficiency of the service provided by the Library personnel.

Revision of the arrangement of the Library's rooms provided opportunity also to replace the wooden book stacks with modern steel ones. Those in the reading room were grained and stained to resemble mahogany. Much-needed additions also were made to the shelving space. The finding of books and pamphlets in the stack room has been facilitated by installation of fluorescent lights. The new map cases have been placed in a conspicuous position in the stack room and thus made more accessible for use.

For those unacquainted with its facilities, it may be well to call attention to the fact that the Library of Field Museum, which now contains approximately 124,000 books and pamphlets on anthropology, botany, geology, zoology, and related subjects, offers the largest reference collection in its special fields in Chicago. It is particularly rich in anthropological and ornithological works, with

collections that rank among the foremost in the world. Invaluable for research are the extensive series on its shelves of the proceedings, transactions and publications of learned societies, academies, and universities all over the world.

Strictly a reference library, the reading room is maintained to make the Library's resources available for the use of scientists, students, teachers, and others engaged in research work. These facilities are extended, on application, to laymen with problems requiring reference to the works in a scientific library. Amateur naturalists, and persons with hobbies involving the natural sciences, will find much of value in the Museum Library. The Library is open week days from 9 A.M. to 4 P.M., except Saturdays, when it closes at noon; it is closed all day on Sundays and holidays.

Another great improvement in the Library, long needed and much desired, has been the opportunity to bind an accumulation of periodicals that had been gathering for many years. This had become imperative for the proper preservation of the files. Begun in April, this activity has required much time throughout the rest of the year. The number of volumes bound is 6,413.

During the early part of the year the Library had the help of several WPA workers who were of real assistance in much of the detail work. Due partly to their help, 17,070 cards were written and filed in the catalogues during the year.

As in previous years, efforts were made to complete some partial files of periodicals. One of the latest acquisitions is the long-desired first thirty-two volumes of *Petermann's Mitteilungen* and Numbers 1-84 of the *Ergänzungsheft*. These are beautifully bound, and contain important maps, mounted on linen. Volumes 19-26 of the *Journal of Egyptian Archaeology* were secured, thus completing the early part of the file. The file of the journal *Iraq* has also been completed to date. The set of the *Scientific Survey of Porto Rico and the Virgin Islands*, formerly incomplete, now includes all parts thus far issued. The *Biological Bulletin* file has also been completed. Subscriptions were entered for a few new periodicals, among them the new *Malayan Nature Magazine*.

President Field, Director Gregg, and some of the members of the staff have generously presented current periodicals to the Library. They have also given a number of significant books.

Mr. Boardman Conover, a Trustee of the Museum, presented a much appreciated copy of Agassiz, *Nomenclator Zoologicus*, and five volumes of desirable works on the birds of Europe and Asia.

Mr. Karl P. Schmidt, Chief Curator of the Department of Zoology, presented some old books, difficult to obtain, as well as a copy of *Field Book of the Snakes of the United States and Canada*, which he wrote in collaboration with Mr. D. Dwight Davis, Curator of Anatomy and Osteology.

Mr. Henry W. Nichols, Chief Curator of the Department of Geology, presented several volumes of *Fortune*. Mr. Elmer S. Riggs, Curator of Paleontology, made additions to the collection of paleontological publications.

Mr. William J. Gerhard, Curator of Insects, presented many entomological pamphlets. Mr. Emil Liljeblad, former Assistant Curator of Insects, had a fine collection of books and separates on Coleoptera from which, as an addition to the 175 he presented in 1940, he gave 150 more in 1941—a valuable and much appreciated acquisition. Mr. Rupert L. Wenzel, Assistant Curator of Insects, also is the donor of many entomological pamphlets.

Dr. Henry Field presented several important foreign periodicals. The publication of the Paleontographical Society of London, an unusual periodical, has been especially welcome, as are also publications on comparative morphology and ancient man. From the late Mr. Carl F. Gronemann, formerly Staff Illustrator, the Library received Kurr's *Das Mineralreich im Bildern*.

Mrs. Stanley Field gave a set of the *Naturalist's Miscellany*, a much appreciated gift. Mrs. Malcolm Farley, of Chicago, added valuable numbers to the Chinese material in the Library. Mr. Peter Gerhard, of Winnetka, Illinois, presented approximately 100 maps of various parts of the world. Mr. Stanley Charles Nott, of Palm Beach, Florida, presented several more of his publications on Chinese jade. Mrs. Robert Sonnenschein, of Chicago, is the donor of seven volumes on Egyptian mythology and archaeology. Mr. Walter Necker gave the Library some numbers of the Bulletin of the Boston Society of Natural History which hitherto had been impossible to obtain. Miss Ruth Marshall, of Wisconsin Dells, gave twenty-eight publications on water mites.

Dr. Gregorio Bondar, of Bahia, Brazil, has most kindly sent interesting publications on palms as well as helpful material on entomological subjects.

The volumes necessary to complete Field Museum's set of *Publications of the Egyptian Department* of the Metropolitan Museum of Art, New York, were received as a gift from that institution. These are invaluable in the field of Egyptian archaeology. The

Carnegie Institution of Washington has continued the gift of the noteworthy publications it issues. The Conoco Travel Bureau, Chicago, presented an up-to-date set of its road maps, which have been found very useful.

The Library has been fortunate in making some purchases of important books, among which the following are outstanding: Boerschmann, *Chinesische Architektur*; Creswell, *Muslim Architecture*; *Encyclopaedia of the Social Sciences* (8 vols.); Herzfeld, *Iran in the Ancient East*; Pope, *Survey of Persian Art* (6 vols.); *Index Londinensis* (Supplement 1921-35); Migula, *Kryptogamenflora von Deutschland*; Grabau and Shimer, *North American Index Fossils: Invertebrates*; *Biological Symposia* (5 vols.); Chenu, *Bibliothèque Conchyliologique* (ser. 1, 4 vols.); Fabricius, *Systema Eleutheratorum*, *Systema Piezatorum*, *Systema Antliatorum*, and *Systema Glossatorum*; Holbrook, *North American Herpetology* (edition 1, 5 vols.); Marseul, *Monographie sur la Famille des Histérides* (and supplement); and Muséum d'Histoire Naturelle de Paris, *Nouvelles Archives* (ser. 1, vols. 1-10).

The number of exchanges has not been increased as much as in other years because so many foreign countries have been entirely cut off by the war. Many of the institutions with which exchanges of publications have been made for years, have not been heard from at all; from others only a few publications have reached this country. Several foreign publications have come with remarkable regularity, however, and some important purchases also have arrived safely.

On this side of the water there have been some good additions to the list of institutions making exchanges, and their publications will be very helpful. Included are institutions in both North and South America. The Museum's gratitude is due to the scientists and scientific institutions who have sent their publications to the Library, both as exchanges and as gifts.

Service of the Library has included granting requests for permission to photograph illustrations and pages of the text of rare books. These requests have come from many distant as well as local correspondents. In many cases this was the only way in which access could be had to certain books, as other copies are not available in this country.

The Library has been greatly assisted in its work by loans of books from various other libraries, and acknowledges this courtesy with deep appreciation. The Library of Congress has been, as always, especially helpful. Among others which have co-operated

notably are the John Crerar Library, Chicago; the Libraries of the University of Chicago and the Oriental Institute; Harvard University, and its Libraries (Peabody Museum, and the Museum of Comparative Zoology); Columbia University Library; the United States Department of Agriculture, and the Missouri Botanical Garden.

Field Museum has reciprocated by sending its books on loan to libraries all over the country. The number of books thus sent out has been increasing from year to year. This service of libraries to each other constitutes a movement constantly growing in importance and value. The Library of Congress is doing much to promote these relations by making information about each library's resources available through its Union Catalogue.

PUBLICATIONS AND PRINTING

The distribution of publications by the Museum during 1941 differed from the sendings of other years in that shipments for about two-thirds of the foreign exchanges were withheld due to the war. Of the publications issued during the year, 6,248 copies destined for existing foreign exchanges have been held for later shipment. Many have been prepared in addressed packets, and others have been wrapped with the open stock that is available for future sales and other distribution.

The Museum did send 11,687 scientific publications, 1,744 leaflets, and 880 miscellaneous publications and pamphlets on exchange account to domestic and certain foreign institutions, and to individuals engaged in scientific work.

The books for distribution abroad were sent to the Smithsonian Institution in Washington, D.C., which forwarded them through its international exchange bureau. Acknowledgment of receipt has come from libraries in many far distant parts of the world. Grateful acknowledgment is made to the Smithsonian Institution for its courtesy and helpfulness in effecting such deliveries.

The Museum also sent 3,794 complimentary copies of the *Annual Report of the Director* for 1940 to its Members.

Sales during the year totaled 2,625 publications, 6,819 leaflets, and 18,011 miscellaneous pamphlets such as Guides, Handbooks, and Memoirs.

Twenty-two new exchange arrangements were established with institutions and scientists during the year, which undoubtedly will prove of mutual benefit.

Interest in the living races and in prehistoric man again was manifested by the numerous purchases of copies of *The Races of Mankind* and *Prehistoric Man* leaflets, of which more than 1,200 were sold during the year. At the end of December a third edition of the latter was issued, and a fourth edition of *The Races of Mankind* is scheduled to appear early in the spring of 1942. Since the first printings of these two leaflets in the summer of 1933, more than 18,900 copies have been sold.

New editions of three other leaflets—*Archaeology of South America*, *A Forest of the Coal Age*, and *Meteorites*—were required in 1941.

An important volume published for the Geology Memoirs Series, *The Upper Ordovician Fauna of Frobisher Bay, Baffin Land*, by Dr. Sharat Kumar Roy, Curator of Geology, was given wide exchange distribution. It contains a narrative of the Rawson-MacMillan Expedition of Field Museum to Labrador and Baffin Land during the seasons of 1927 and 1928, with notes on the coastal geology of that region, and descriptions of the fossils collected.

The total number of post cards sold during 1941 was 84,226, of which 9,206 were grouped into 500 sets. Reprints of sixty-five individual post card views totaled 85,000 copies, and there were 200 packaged sets reissued of the thirty cards comprising a representative collection of views of the Malvina Hoffman bronzes of the races of mankind.

Production of the Division of Printing during the year included twenty-five new numbers in the regular publication series of the Museum. These comprised 1,600 pages of type composition. In subject matter, there were one anthropological, four botanical, seven geological, and twelve zoological publications; also included was the *Annual Report of the Director* for 1940. These twenty-five publications were printed by Field Museum Press in editions totaling 26,771 copies. Three reprints from Volume XIII of the Botanical Series, *Flora of Peru*, consisting of 58 pages (262 copies), and eleven reprints from Volume 27 of the Zoological Series, *Papers on Mammalogy*, consisting of 370 pages (1,141 copies), also were printed. Three leaflets, one in the anthropological series and two geological ones, were reprinted; likewise, a third edition of one anthropological leaflet was printed. The number of pages in these four leaflets was 256, and the copies totaled 6,655. A twenty-first edition and a reprint of the *General Guide*, each consisting of 56 pages and ten illustrations, were issued, the two printings totaling 11,377 copies;

also printed were a tenth edition of the *Handbook of Field Museum*, containing 78 pages (2,555 copies), and a Geological Memoir, consisting of 212 pages (909 copies). The total number of pages printed in all books was 2,686, and the total of copies issued was 49,670.

A large part of the time of the printers was consumed in miscellaneous job work. Printing of the twelve issues of *Field Museum News* (eight pages per issue), with an average of 5,200 copies a month, was one of the Division's major tasks. The number of exhibition labels printed for all Departments exceeded that of any previous year, totaling 6,350. Other printing, including Museum stationery, posters, lecture schedules, post cards, pin labels, etc., brought the total for the year to 995,357 impressions.

A detailed list of publications follows:

PUBLICATION SERIES

- 488.—Zoological Series, Vol. 24, No. 16. Reptiles and Amphibians from Central Arabia. By Karl P. Schmidt. January 31, 1941. 6 pages, 2 text-figures. Edition 900.
- 489.—Zoological Series, Vol. 24, No. 17. Malacological Notes—II. By Fritz Haas. January 31, 1941. 8 pages, 2 plates (1 colored). Edition 924.
- 490.—Zoological Series, Vol. 24, No. 18. New Termitophilous Diptera from the Neotropics. By Charles H. Seevers. January 31, 1941. 20 pages, 1 text-figure. Edition 832.
- 491.—Botanical Series, Vol. IX, No. 6. Studies of the Vegetation of Missouri—II. Phanerogamic Flora of the Fresh-Water Springs in the Ozarks of Missouri. By Julian A. Steyermark. February 28, 1941. 142 pages, 24 plates, 21 text-figures. Edition 821.
- 492.—Zoological Series, Vol. XXII, No. 7. New and Little Known Neotropical Histeridae. By Rupert L. Wenzel and Henry S. Dybas. February 28, 1941. 42 pages, 4 plates. Edition 832.
- 493.—Zoological Series, Vol. 24, No. 19. Birds from the Yucatan Peninsula. By Melvin A. Traylor, Jr. February 28, 1941. 32 pages, 1 text-figure. Edition 807.
- 494.—Geological Series, Vol. 8, No. 4. A New Fossil Alligator from Nebraska. By Karl P. Schmidt. March 15, 1941. 6 pages, 2 text-figures. Edition 927.
- 495.—Zoological Series, Vol. 24, No. 20. Two New Birds from British Guiana. By Emmet R. Blake. March 15, 1941. 6 pages. Edition 827.
- 496.—Botanical Series, Vol. XIII, Part IV, No. 1. Flora of Peru. By J. Francis Macbride. June 30, 1941. 566 pages. Edition 834.
- 497.—Report Series, Vol. 12, No. 2. Annual Report of the Director for the Year 1940. January, 1941. 156 pages, 10 plates. Edition 5,688.
- 498.—Anthropological Series, Vol. 33, No. 1. Camp, Clan, and Kin among the Cow Creek Seminole of Florida. By Alexander Spoehr. August 2, 1941. 28 pages, 1 text-figure. Edition 802.
- 499.—Zoological Series, Vol. 24, No. 21. The Herpetological Fauna of the Salama Basin, Baja Verapaz, Guatemala. By Karl P. Schmidt and L. C. Stuart. August 30, 1941. 16 pages, 2 text-figures. Edition 897.
- 500.—Zoological Series, Vol. 24, No. 22. Copulatory Adjustment in Snakes. By Clifford H. Pope. August 30, 1941. 4 pages, 1 text-figure. Edition 830.

- 501.—Zoological Series, Vol. 24, No. 23. A New Subspecies of *Sceloporus jarrovi* from Mexico. By Hobart M. Smith and Bryce C. Brown. August 30, 1941. 6 pages, 1 text-figure. Edition 810.
- 502.—Geological Series, Vol. 8, No. 5. A New Procyonid from the Miocene of Nebraska. By Paul O. McGrew. September 20, 1941. 4 pages, 2 text-figures. Edition 985.
- 503.—Geological Series, Vol. 8, No. 6. A New Miocene Lagomorph. By Paul O. McGrew. September 20, 1941. 6 pages, 1 text-figure. Edition 943.
- 504.—Geological Series, Vol. 8, No. 7. A New Erinaceid from the Lower Miocene. By Grayson E. Meade. September 30, 1941. 6 pages, 1 text-figure. Edition 909.
- 505.—Zoological Series, Vol. 24, No. 24. Records of Large Fresh-Water Mussels. By Fritz Haas. October 30, 1941. 12 pages. Edition 850.
- 506.—Botanical Series, Vol. 22, No. 7. Additions to Our Knowledge of the American and Hawaiian Floras. By Earl Edward Sherff. October 31, 1941. 38 pages. Edition 836.
- 507.—Geological Series, Vol. 8, No. 8. A New Phororhacoid Bird from the Deseado Formation of Patagonia. By Bryan Patterson. October 31, 1941. 6 pages, 1 text-figure. Edition 904.
- 508.—Geological Series, Vol. 8, No. 9. Heteromyids from the Miocene and Lower Oligocene. By Paul O. McGrew. October 31, 1941. 4 pages, 1 text-figure. Edition 938.
- 509.—Botanical Series, Vol. 20, No. 4. Tropical Marine Algae of the Arthur Schott Herbarium. By William Randolph Taylor. November 29, 1941. 24 pages, 2 plates. Edition 1,084.
- 510.—Geological Series, Vol. 9, No. 1. The Aplodontoidea. By Paul O. McGrew. December 5, 1941. 30 pages, 13 text-figures. Edition 972.
- 511.—Zoological Series, Vol. 27. Papers on Mammalogy. Published in honor of Wilfred Hudson Osgood. December 8, 1941. 396 pages, 12 plates, 57 text-figures. Edition 782.
- 512.—Zoological Series, Vol. XXII, No. 8. The Amphibians and Reptiles of British Honduras. By Karl P. Schmidt. December 30, 1941. 38 pages, 1 text-figure. Edition 887.

Reprinted from Botanical Series, Vol. XIII, *Flora of Peru*

- Botanical Series, Vol. XIII, Part IV, No. 1, pp. 181–202. Begoniaceae. By Lyman B. Smith and Bernice G. Schubert. June 30, 1941. 24 pages. Edition 212.
- Botanical Series, Vol. XIII, Part IV, No. 1, pp. 52–56. Lacisternaceae. By Charles Baehni. June 30, 1941. 6 pages. Edition 25.
- Botanical Series, Vol. XIII, Part IV, No. 1, pp. 56–82. Violaceae. By Charles Baehni and R. Weibel. June 30, 1941. 28 pages. Edition 25.

Reprinted from Zoological Series, Vol. 27, *Papers on Mammalogy*

- Zoological Series, Vol. 27, pp. 17–36. Pygmy Sperm Whale in the Atlantic. By Glover M. Allen. December 8, 1941. 20 pages, 4 text-figures. Edition 76.
- Zoological Series, Vol. 27, pp. 37–124. Mammals Collected by the Vernay-Cutting Burma Expedition. By H. E. Anthony. December 8, 1941. 86 pages, 4 plates, 1 text-figure. Edition 102.
- Zoological Series, Vol. 27, pp. 125–136. Cranial and Dental Characters of Some South American Cervidae. By Angel Cabrera. December 8, 1941. 12 pages, 5 text-figures. Edition 76.
- Zoological Series, Vol. 27, pp. 137–228. The Arteries of the Forearm in Carnivores. By D. Dwight Davis. December 8, 1941. 92 pages, 34 text-figures. Edition 76.

- Zoological Series, Vol. 27, pp. 229–232. A Pleistocene Otter from Iowa. By Edward A. Goldman. December 8, 1941. 4 pages, 1 text-figure. Edition 76.
- Zoological Series, Vol. 27, pp. 233–278. Revision of the Rodent Genus *Microdipodops*. By E. Raymond Hall. December 8, 1941. 46 pages, 8 text-figures. Edition 803.
- Zoological Series, Vol. 27, pp. 279–292. The Femoral Trochanters. By A. Brazier Howell. December 8, 1941. 14 pages, 2 text-figures. Edition 76.
- Zoological Series, Vol. 27, pp. 293–312. On the Identity of the Porpoise *Sagmatias amblyodon*. By Remington Kellogg. December 8, 1941. 20 pages, 7 plates. Edition 102.
- Zoological Series, Vol. 27, pp. 313–318. Incisor Tips of Young Rodents. By Barbara Lawrence. December 8, 1941. 6 pages, 2 text-figures. Edition 76.
- Zoological Series, Vol. 27, pp. 319–370. The Races of the Ocelot and the Margay. By R. I. Pocock. December 8, 1941. 52 pages. Edition 76.
- Zoological Series, Vol. 27, pp. 371–388. Descriptions and Records of Neotropical Bats. By Colin Campbell Sanborn. December 8, 1941. 18 pages. Edition 102.

MEMOIRS SERIES

- Geology Memoirs, Vol. 2. The Upper Ordovician Fauna of Frobisher Bay, Baffin Land. By Sharat Kumar Roy. September 30, 1941. 212 pages, 146 text-figures. Edition 909.

LEAFLET SERIES

- Anthropology, No. 33. Archaeology of South America. By J. Eric Thompson. 160 pages, 12 plates, 1 map, 18 text-figures. Reprint. March, 1941. Edition 554.
- Anthropology, No. 81. Prehistoric Man. Hall of the Stone Age of the Old World. By Henry Field, with a preface by Berthold Laufer. 44 pages, 8 plates, 1 map, 1 cover design. Third edition. December, 1941. Edition 3,000.
- Geology, No. 14. A Forest of the Coal Age. By B. E. Dahlgren. 40 pages, 2 plates, 21 text-figures, 3 maps, 1 cover design. Reprint. March, 1941. Edition 1,101.
- Geology, No. 4. Meteorites. By Oliver C. Farrington. 12 pages, 4 plates. Reprint. December, 1941. Edition 2,000.

HANDBOOK SERIES

- Handbook. General information concerning the Museum, its history, building, exhibits, expeditions, and activities. Tenth edition. July, 1941. 78 pages, 8 plates, 1 cover design. Edition 2,555.

GUIDE SERIES

- General Guide to Field Museum of Natural History Exhibits. Twenty-first edition. 1941. 56 pages, 6 plates, 3 text-figures, 1 cover design. Edition 9,300.
- General Guide to Field Museum of Natural History Exhibits. Twenty-first edition. 1941. Reprint. 56 pages, 6 plates, 3 text-figures, 1 cover design. Edition 2,077.

PHOTOGRAPHY AND ILLUSTRATION

The Division of Photography reports for 1941 a total production of 25,373 items. This figure includes negatives, prints, bromide

enlargements, lantern slides, transparencies, etc. Although a few hundred of these were made for sales, fulfilling orders received from other institutions, publishers, and the public, the great majority were necessary to meet the various requirements of the Departments and Divisions of the Museum.

The Museum staff Photographer and his assistant were responsible for the production of 11,778 items; the remainder, consisting chiefly of the making of prints of routine character, was produced by workers assigned by the federal Work Projects Administration during the period preceding July 1, at which time this project ceased. Included in the WPA production was a great number of prints of type specimens of plants for the herbarium as a result of the negatives collected in Europe through the efforts of the Department of Botany over a period of more than ten years prior to the beginning of the war.

More than 100,000 negatives are now included in the photographic files of the Museum, making available pictures for various uses covering an enormous number of subjects in every one of the institution's Departments. In order that this material may be used to full advantage an elaborate system of classifying, indexing, and numbering negatives and prints has become necessary, and is being carried on with skill and speed as has been the case in several years past. This work during 1941 involved more than 62,000 items handled or operations performed.

The Museum Collotyper produced a total of 723,600 prints during 1941. These included illustrations for publications and leaflets, covers for books and pamphlets, picture post cards, headings for lecture posters, and miscellaneous items.

The Museum Illustrator produced 142 drawings, the majority of which were used for publication purposes; the remainder for exhibitions, experimental work, etc. Besides scientific drawings, there were graphs, charts, transparencies, diagrams, lettered plates, mimeograph stencil drawings, and an oil painting. The drawing, lettering, and coloring of 79 maps was a major item, as was also the retouching, etching, and opaquing of 501 photographic negatives. Photographs retouched, lettered, and tinted numbered 69, and stereopticon slides colored were 266 in number. Other miscellaneous work included the tooling of 51 cuts, and the correcting, retouching, and lettering of 50 drawings made by outside illustrators and submitted for Museum publications. Assistance in the designing of a poster publicizing Harwa, the X-rayed mummy, was given to the

Division of Public Relations. A three-colored poster and a three-colored folder announcing activities of the Raymond Foundation were also designed.

MAINTENANCE AND CONSTRUCTION

An important improvement for the comfort and convenience of the public was the construction, in the north center portion of the ground floor, of new lavatories with an adjacent lobby and rest room, replacing former facilities. The new arrangement practically doubles capacity and provides a waiting room where men, women, and children all may meet. Facilities for smoking are also provided. Separate from the public rooms is a rest room to care for cases of emergency illness or accident.

The fixtures and fittings from the old rooms were disposed of, and the east room is being converted into additional exhibition area for Hall B (New World Archaeology), while the west room is being reconstructed as an enlargement of the children's lunch room. Three smaller lavatories were also built for employees' use: one adjoining the guards' rooms; one adjacent to the Cafeteria employees' dressing rooms, and one on the fourth floor near the paint shop.

A large amount of exterior repair work was done during the year. All four elevations were given attention as to tuck pointing and painting of woodwork. All exterior sashes were painted, including those in light courts on the second and third floors. White paint, which gives better protection and appearance than the former black finish, was applied to sashes, frames, and screens of the light courts.

The parapet walls on the north side of the building at the third floor level were removed and rebuilt to correct an outward "lean." Expansion joints were built in at proper intervals to prevent a recurrence of this condition.

The main roof skylight above Stanley Field Hall was a source of considerable trouble during a rather wet autumn, and it became necessary to recondition it. This work was begun late in the year under a time-and-material contract calling for completion in 1942.

Fifty-five casement sashes and frames were replaced by double hung sashes of white pine with frames of tidewater cypress, completing all sash replacement on the fourth floor.

The roof slabs of the boiler room and shipping room, which form part of the terrace floor, were caulked and painted to prevent leaks. The weeds growing in the terrace walk were eliminated with a special acid, and the edges of the lawn were trimmed straight.

When the United States entered the war, equipment was purchased to repair, replace, and increase fire-fighting apparatus throughout the building. Windows in the night guards' rooms, and the boiler and pump rooms, were prepared for possible "blackouts." Sashes at each end of the second floor exhibition halls on the east side of the building were rehung to give the maintenance and guard forces better access to the roofs of each light court. This was essential because in the exhibition halls dioramas or transparencies bar most of the windows which would normally be used.

To identify the building for strangers in its vicinity, four new signs were made and placed in remodeled standards at the north and south entrances. Several other signs were purchased and hung in the exhibition halls. The Museum's carpenters also made a number of boxes and crates required for various Departments and Divisions. A special ladder was built for the Staff Artist, and a stationery cabinet was made for the Division of Public Relations. A large stationery and clothes cabinet was constructed and installed in the Raymond Foundation office to replace a miscellaneous assortment of old furniture. Two bulletin boards were made and hung on the third floor. A great deal of time was spent on repair and maintenance of door checks, window screens, fire extinguishers, etc.

The areas under and near the south steps on the ground floor, and the entire shipping room, were cleaned. Old cases were dismantled, and usable material was salvaged for future use.

A large amount of wall washing and painting was done during the year. A new safety steel scaffold was purchased and used in washing and starching the walls and statuary in Stanley Field Hall. Rooms 14, 15, 49, 79, 82, 84, 85, 86, and 89 were washed and painted. The north corridor on the ground floor, leading to the new rest rooms and Cafeteria, was redecorated. The shaft of the passenger elevator was washed and painted. A new rubber tile floor was installed in the Registrar's office, and the room was completely redecorated.

The janitorial force was fitted out with new uniforms under a system whereby the laundry cleans the uniforms and the Museum pays only the laundry charges on each soiled garment.

A special room was constructed on the ground floor for the Department of Anthropology, to house the X-ray and fluoroscope equipment used in the new exhibit of the mummy Harwa.

Light boxes were installed over the cases in Edward E. and Emma B. Ayer Hall (Hall 2—Archaeology of Etruria and Rome).

A large portion of the construction work required in the remodeling of Hall B (New World Archaeology) was done. Nineteen new "built-in" cases were completed, except for the final coat of paint; two floor cases were remodeled, and five new cases were purchased. Work in this hall will continue in 1942. A new storage room was completed at the south end of the third floor.

In the working quarters of the Department of Botany, steel door storage cases from Rooms 14 and 15 were reinstalled in Room 17, thus permitting the other two rooms to be equipped and redecorated for office use. Two 8-door herbarium cases were set up in Room 9. Steel racks were assembled in Room 61 for storage of metal cans containing specimens. The case for the Atlantic intertidal vegetation diorama in Martin A. and Carrie Ryerson Hall (Hall 29—Plant Life) was glazed and trimmed.

The work of reconstructing H. N. Higinbotham Hall of Gems and Jewels (Hall 31), begun in 1940, was completed in time for a public opening in June. Construction was begun on four cases for the Department of Geology for use in Hall 36. Additional bookshelving was added to the Department's library, and a 12-door metal storage case was set up in Room 116 after rearranging the laboratory sink and equipment.

The remodeling and building of cases for the Division of Paleontology was continued, and only nine cases remain to be remodeled. Twenty "open base" cases were moved from Ernest R. Graham Hall (Hall 38) to Frederick J. V. Skiff Hall (Hall 37), and twenty old cases in the latter were dismantled. A number of bases for mounting specimens were constructed, and two large discarded cases were remodeled to house a study collection in Room 107.

Four cases were prepared for an exhibit illustrating embryology which is to be installed in Hall 19 (Anatomy and Osteology). The location chosen for this exhibit made it necessary to make extensive shifts of other exhibits in the hall. Three wall-suspended cases were constructed for the Department of Zoology.

Eight new cases were purchased for the west end of Albert W. Harris Hall (Hall 18) to house new insect exhibits in preparation. Two of the pyramid screens needed for these were made.

Light boxes were installed on the cases in George M. Pullman Hall (Hall 13), Albert W. Harris Hall (Hall 18), and Hall 19 (Anatomy and Osteology). It was necessary thoroughly to clean the glass on the inside of the cases in Halls 13 and 18, a task which required removal of many exhibits, but a marked improvement was thus achieved.



A GLIMPSE OF PART OF THE NEW HALL OF GEMS AND JEWELS

The full brilliance and color of the magnificent collection is brought out as never before by new modern types of exhibition cases equipped with fluorescent lighting. A Tiffany glass window enhances the beauty of the room

H. N. Huginbotham Hall (Hall 31)

The "built-in" case for the crocodile group at the east end of Harris Hall was glazed and trimmed, as was the case for the new peacock habitat group in Hall 20. Preparations were made for the accommodation of a habitat group of Galapagos fishes in Hall O. Partitions with doors were built at the west end and center of the Hall of Fishes (Hall O) to separate it from the service area.

About ninety lineal feet of counter, two research tables, and a wall cabinet were built and installed in Room 86 (Division of Insects). The interior wooden racks of three steel storage cases in this room were remodeled so as to make the trays of adjoining cases interchangeable with them.

A base was built for a mammal group to be placed in Hall 15. Four benches were constructed for mounting new electric power tools used by preparators in Room 99 of the Department of Zoology. Shelves in the metal storage cases on the west side of the fourth floor were shifted, and additional shelves added for the Division of Herpetology.

Expedition equipment, including two glass-bottomed buckets for under-water studies, were made for the Division of Fishes. Three racks on casters, to fit metal specimen tanks and alcohol drums, were also made. Metal ends were made and fitted to shelving in the storage cases on the east side of the fourth floor for the Division of Lower Invertebrates.

Construction was begun on three work rooms for taxidermists and preparators at the north end of the east side of the fourth floor. Steel beams and floor to form a mezzanine for future storage cases were erected, and completion is scheduled for early in 1942.

The N. W. Harris Public School Extension delivery trucks were fitted with new shelves. New shades were purchased and installed in the photographer's operating room.

The relocation and reconstruction of the Library and stack room (begun in 1940) was completed. Two book trucks were made for the Library.

All four boilers were thoroughly cleaned. New baffle tiles were installed where necessary, a total of 750 tube tiles being used; 160 arch tiles were used in repairs on one of the boilers; a new circulating tube was installed in another. The stokers were repaired wherever necessary.

The coal conveyor was overhauled; several new buckets and eighteen feet of worm screw were installed. New hopper chutes were made for the ash conveyor. Soot blowers were removed and

repaired, 125 feet of new pipe being used. The smoke stack was relined with asbestos blocks. A new shaft was installed on the bilge pump in the boiler room. A new steam boiler feed pump was installed by the engine room crew, along with a new electric boiler feed unit.

A new six-inch water main was run into the building from the Thirteenth Street main to provide against emergency shutdowns in the regular service. Valves and check valves were installed in the lines in compliance with Board of Health regulations.

Vacuum pumps were overhauled and repacked. The hydraulic elevator at the shipping and receiving room entrance was repacked and necessary repairs made.

Under contracts of several years' standing the Museum furnished 11,805,214 pounds of steam to the John G. Shedd Aquarium, 5,931,362 pounds to Soldier Field, and 8,063,705 pounds to the Chicago Park District Administration Building.

Fluorescent lighting was extended to Halls 2, 13, 18, and 19 under the program for improvement of illumination inaugurated in 1939. Some fluorescent lighting was installed also in the Library, and in Rooms 48, 56, 75, 85, 89, and 107.

The new exhibition cases in H. N. Higinbotham Hall of Gems and Jewels (Hall 31) were provided with fluorescent lights and ventilating fans. In the Hall of Chinese Jades (Hall 30) the lights were replaced with larger lamps which greatly improved illumination. Additional lights were installed in Halls 29 and 38, and in the egg storage room on the third floor. Altogether, 1,036 new light units were installed.

New feeder cable was run from the switch room to supply current for the new lavatories and the X-rayed mummy case in Hall J. Water and drain lines were also supplied to meet requirements for operation of the X-ray machine.

An alarm system was developed and installed in the Hall of Gems. A microphone was purchased and a public address system set up in the James Simpson Theatre, using the existent sound equipment.

All the lavatories on the third floor were checked over and equipment was replaced where necessary. A new lavatory was installed in Room 14.

All cases in Halls 13, 15, 16, 17, 22, and C were poisoned to protect their contents against damage by insects, etc.

PUBLIC RELATIONS

Despite the ever-increasing demands made upon their space by news of the war and other critical events, the newspapers of Chicago and of the nation continued to give their columns generously to information for the public released through Field Museum's press bureau. Of prime importance to the Museum, of course, is publicity in the local metropolitan dailies, and deep appreciation is due to the *Chicago Daily News*, *Chicago Tribune*, *Chicago Daily Times*, *Chicago Herald-American*, and *Chicago Journal of Commerce*, all of which have been co-operating with the Museum for years, and also to a newcomer, the *Chicago Sun*, which began publication toward the end of 1941. In addition to the large dailies, the Museum directed its publicity efforts to hundreds of papers each of which reaches special groups of readers, such as the community newspapers and the foreign language papers circulated among the populations of distinct neighborhoods within Chicago, and the principal dailies and weeklies published in the city's suburbs and in other parts of Illinois and neighboring states. Much desirable publicity was obtained also in the pages of various special newspapers and periodicals, such as *This Week in Chicago*, *Downtown Shopping News*, *National Corporation Reporter*, and *Daily Law Bulletin*.

In other cities throughout the nation, and to some extent internationally, the attention of prospective visitors to Chicago was directed to Field Museum through news releases carried in the wire and mail services of such agencies as the Associated Press, United Press, International News Service, and Science Service. Leading newspapers in New York, Boston, Los Angeles, and other cities receive, at their own request, news direct from Field Museum's press bureau so that they may have a more complete coverage than can be afforded by the national news services. Stories about the Museum appeared frequently also in the news-magazine *Time*, in the *Illustrated London News*, and other important magazines in this country and abroad.

Nearly 300 news releases were prepared by the Public Relations Counsel and distributed through all of the above-mentioned channels, in many cases accompanied by photographs. In addition supplementary material was furnished constantly to reporters and photographers sent to the Museum on special assignments. As has occurred in past years, news from the Museum occasionally also was followed up by the appearance of an editorial on the subject of the institution's releases.

As a result of the reopening of the newly installed Hall of Gems and Jewels (Hall 31, H. N. Higinbotham Hall), and the opening of the entirely new Hall of Fishes (Hall O), the Museum received especially lavish publicity, with several pictorial "spreads," including a page in full colors in the *Chicago Sunday Tribune*. The *Sunday Tribune*, on its own initiative, also published late in the year a comprehensive illustrated article on the Museum's purposes and accomplishments.

Special attention was devoted to the release of articles relating the Museum exhibits to current topics of the day, as, for example, featuring the institution's exhibits from Pacific islands when public interest was focused upon that area due to the attacks on Hawaii, the Philippines, the Dutch East Indies, and Malaya. The Museum co-operated in a number of instances with other civic agencies in joint publicity. As usual, a constant flow of releases was maintained about all current activities such as expeditions, research, new exhibits, lectures, children's programs, etc.

To maintain constant and intimate contact with the several thousand persons who contribute to the Museum's support through membership subscriptions, the monthly bulletin *Field Museum News* was continued in publication, completing its twelfth volume and year. Distributed to all Members promptly at the beginning of each month, this bulletin kept them informed of the institution's activities, and brought them illustrated articles on scientific subjects of popular interest. Besides providing a service to the membership, *Field Museum News* operates as an exchange medium in the Museum's relationships with other similar institutions, and also as the source of much additional publicity—many of its articles are reprinted or quoted in the daily press and in a wide variety of periodicals, including magazines both for the general reader and those addressed to specialized classes, such as trade and technical journals.

Radio stations and networks continued to co-operate in the Museum's publicity by carrying news from the institution, and by presenting special programs devoted to Museum activities or featuring members of the staff as speakers. Especially notable were programs about the work of the Museum presented in the series "A World of Interest" by Mrs. Clifton (Frane) Utley, well-known radio personality, on station WBBM and the network of the Columbia Broadcasting System.

The Museum continued to benefit from advertising facilities made available by the Chicago Rapid Transit Lines, the Chicago,

Aurora and Elgin Railroad, the Chicago, North Shore and Milwaukee Railroad, the Chicago and North Western Railway, the Illinois Central System, and the Chicago Surface Lines. Through the co-operation of the Illinois Art Project of the federal Work Projects Administration the Museum was enabled to issue a number of attractive posters for use in the stations and cars of the above named transportation companies, and in libraries, travel bureaus, schools, office buildings, department stores, hotels, and elsewhere. As has been the practice for years past, many thousands of descriptive folders advertising the Museum were distributed through these various agencies, and also thousands of folders announcing the Sunday afternoon lectures presented at the Museum by Mr. Paul G. Dallwig, The Layman Lecturer. Likewise, thousands of folders were provided for delegates attending the many conventions held in Chicago.

Valuable contacts for the promotion of the Museum's press and radio relations were maintained through its representation, by the Public Relations Counsel, in the Publicity Club of Chicago and the Chicago Conference on Association Publicity.

DIVISION OF MEMBERSHIPS

Although the demands of taxes and contributions necessary for national defense produced varied and unusual drains on the resources of all citizens during the past year, it is indeed encouraging to be able to report a net increase of 89 in the number of Museum Members on record in 1941. This is an improvement in number and in rate of increase compared with 1940. The total of new Members enrolled in 1941 was 451, against a loss of 362 incurred through transfers, cancellations and deaths. The total number of memberships as of December 31, 1941, was 4,313.

Field Museum is greatly indebted to the many Members who have associated themselves with its activities, and the administration of this institution wishes to express its gratitude and appreciation for their loyal support. Such public-spirited co-operation and support constitutes a most important factor in making possible the successful continuation of the educational and cultural program of the Museum. An expression of deep appreciation is due also to those Members who found it necessary to discontinue their memberships, and it is hoped when conditions are more favorable that they will again enroll as Members of this institution.

The following tabulation shows the number of names on the list of each membership classification at the end of 1941:

Benefactors.....	23
Honorary Members.....	12
Patrons.....	26
Corresponding Members.....	7
Contributors	127
Corporate Members.....	46
Life Members.....	241
Non-Resident Life Members.....	12
Associate Members.....	2,390
Non-Resident Associate Members.....	8
Sustaining Members.....	6
Annual Members.....	<u>1,415</u>
Total Memberships.....	4,818

The names of all persons listed as Members during 1941 will be found on the pages at the end of this Report.

In the pages which follow are submitted the Museum's financial statements, lists of accessions, *et cetera*.

CLIFFORD C. GREGG, *Director*

BEQUESTS

Bequests to Field Museum of Natural History may be made in securities, money, books or collections. They may, if desired, take the form of a memorial to a person or cause, to be named by the giver. For those desirous of making bequests to the Museum, the following form is suggested:

FORM OF BEQUEST

I do hereby give and bequeath to Field Museum of Natural History of the City of Chicago, State of Illinois, _____

Contributions made within the taxable year to Field Museum of Natural History to an amount not in excess of 15 per cent of the taxpayer's net income are allowable as deductions in computing net income for federal income tax purposes.

Endowments may be made to the Museum with the provision that an annuity be paid to the patron during his or her lifetime. These annuities are guaranteed against fluctuation in amount and may reduce federal income taxes.

COMPARATIVE ATTENDANCE STATISTICS AND DOOR RECEIPTS

FOR YEARS 1940 AND 1941

	1941		1940
Total attendance.....	1,358,147		1,450,685
Paid attendance.....	86,531		80,888
Free admissions on pay days:			
Students.....	88,276		76,722
School children	77,710		85,249
Teachers.....	3,022		3,181
Members.....	817		1,039
United States Service Men.....	891	
Admissions on free days:			
Thursdays (51).....	175,872	(52)	252,867
Saturdays (52).....	339,453	(52)	376,768
Sundays (52).....	585,575	(52)	573,971
Highest attendance on any day (May 27) ...	47,998	(June 4)	51,247
Lowest attendance on any day (January 7)...	103	(March 13)	121
Highest paid attendance (September 1).....	3,515	(September 2)	3,291
Average daily admissions (363 days)	3,741	(364 days)	3,963
Average paid admissions (208 days).....	416	(210 days)	385
Number of guides sold.....	11,943		10,002
Number of articles checked.....	20,601		23,616
Number of picture post cards sold.....	84,226		83,050
Sales of publications, leaflets, handbooks, portfolios, and photographs.....	\$5,018.42		\$5,504.33

COMPARATIVE FINANCIAL STATEMENTS

FOR YEARS 1940 AND 1941

INCOME	1941	1940
Endowment Funds	\$196,442.74	\$208,608.49
Funds held under annuity agree- ments	22,533.33	27,807.92
Life Membership Fund	10,713.74	11,530.05
Associate Membership Fund...	12,288.74	12,927.91
Chicago Park District	129,498.70	58,130.33
Annual and Sustaining Member- ships	12,770.00	12,085.00
Admissions	21,632.75	20,222.00
Sundry receipts	16,912.14	17,835.43
Contributions, general pur- poses	22.00	1,015.00
Contributions, special purposes (expended <i>per contra</i>)	16,059.69	28,061.45
Special Funds—part expended this year for purposes designated (included <i>per contra</i>)	14,449.56	11,822.93
	<u>\$453,323.39</u>	<u>\$405,046.51</u>

EXPENDITURES		
Collections	\$ 17,650.52	\$ 26,490.19
Operating expenses capitalized and added to collections...	49,986.12	41,701.84
Expeditions	13,888.32	9,983.95
Furniture, fixtures, etc.	21,900.91	69,666.12
Wages capitalized and added to fixtures	3,384.89	7,645.21
Pensions and Group Insurance..	52,452.46	43,078.64
Departmental expenses	46,112.71	40,994.29
General operating expenses	311,377.97	319,212.39
Building repairs and alterations.	100,704.53	66,323.76
Annuities on contingent gifts...	26,271.86	29,870.60
Reserve for repairs and deprecia- tion	35,000.00	35,000.00
	<u>\$678,680.29</u>	<u>\$689,971.99</u>
Deficit	\$225,356.90	\$284,925.48
Contribution by Mr. Marshall Field	252,541.42	283,895.94
Balance	<u>\$ 27,184.52</u>	<u>Deficit.. \$ 1,029.54</u>

THE N. W. HARRIS PUBLIC SCHOOL EXTENSION

	1941	1940
Income from endowment	\$20,220.32	\$20,376.62
Operating expenses	19,063.11	17,205.21
Balance..	<u>\$ 1,157.21</u>	<u>\$ 3,171.41</u>

LIST OF ACCESSIONS

DEPARTMENT OF ANTHROPOLOGY

BARGER, THOMAS C., Linton, North Dakota: 190 pottery sherds—Saudi Arabia (gift).

BORTH, E. C., Chicago: 2 Arat cloths (appliquéd)—North Africa and Arabia (gift).

BRUMAN, HENRY J., State College, Pennsylvania: 51 Huichol Indian ethnological specimens—Jalisco, Mexico (gift).

CHAIT, RALPH, New York: group of six small Ordos bronzes—North China (purchase).

COLLIER, DONALD, Chicago: 1 Nazca comb—south coast of Peru (gift).

CRANE, MRS. RICHARD T., Chicago: 2 Pomo Indian baskets—California (gift).

DENVER ART MUSEUM, Denver, Colorado: 8 Choctaw and Chitimacha baskets—southeastern United States (exchange).

FARLEY, MRS. MALCOLM, Minneapolis, Minnesota: Chinese and Greek pottery sherds (gift).

FIELD, DR. HENRY, Washington, D.C.: 2 head-covering holders—Hilla, Arabia; 9 photographic prints (gift).

FIELD MUSEUM OF NATURAL HISTORY:

Collected by Dr. Paul S. Martin (Field Museum Archaeological Expedition to the Southwest, 1941): approximately 24,000 specimens, including stone and bone tools, pottery sherds, and skeletal material.

FRANK, MRS. MORTIMER, Chicago: 1 painted figurine head—San Juan, Teotihuacan, Mexico (gift).

GAMWELL, MRS. FRANK D., Philadelphia, Pennsylvania: 3 tribal costumes—Yunnan Province, China (gift).

GROW AND CUTTLE, INC., Chicago: 4 Chinese ceramics—T'ang and Sung periods, China (gift); 26 ceramic specimens—China (purchase).

HESTER, E. D., Manila, Philippine Islands: about 200 ceramic fragments—Manzaza, Tagbilaran, Bohol, Philippine Islands (gift).

HUIDEKOPER, COLONEL WALLIS, Twodot, Montana: 22 ethnological specimens from Sioux, Crow, Cheyenne, and Arapaho tribes (gift).

HURT, WESLEY R., JR., Albuquerque, New Mexico: 2 Navajo pottery bowls from Canyon de Chelly, Arizona (gift).

JAMES, F. G., Cleveland, Ohio: 1 stained glass window of Tiffany manufacture (gift).

LARWILL, J. W., Grain Valley, Missouri: 2 stone scrapers and 1 stone graver—prehistoric Indians of Kansas (gift).

LUCKENBILL, MRS. FLORENCE P., Florida: 1 black pot—Costa Rica (gift).

MORRIS, EARL H., Boulder, Colorado: 11 pieces of Basket Maker pottery—La Plata Valley, Colorado (exchange).

NELSON, WILLIAM ROCKHILL, GALLERY OF ART, Kansas City, Missouri: 1 pottery ritual vessel and 8 small bronzes—Anyang, Honan, China (purchase).

PICHER, MAJOR OLIVER S., Hubbard Woods, Illinois: 9 ethnological specimens—Southwest, Arapaho, Hawaii, and China (gift).

RAY, DANIEL A., Chicago: 1 dagger—Micronesia (gift).

SCHMID, CHARLES, Oak Park, Illinois: 1 deadfall (trap)—Alaska (gift).

STANLEY, CHARLES A., Cheeloo University, Tsinan, China: 11 sherds—Anyang, Honan, China; 4 sherds and 1 stone implement—Ch'eng tzu yai, Shantung, China (gift); 21 pottery vessels, Shang and Chou dates, 2 pottery figurines, Wei period, 1 bronze weapon, early Chou period (purchase).

UNIVERSITY OF CHICAGO, Chicago: 3 pieces of pottery, 22 sherds, 11 stone artifacts and 1 specimen of wattle-and-daub—Kincaid Site, Illinois (exchange).

UNIVERSITY OF MICHIGAN (Ceramic Repository), Ann Arbor, Michigan: 1 pot and 7 sherds—northern Florida (exchange).

UNIVERSITY OF PENNSYLVANIA (University Museum), Philadelphia, Pennsylvania: 11 scrapers and broken parts of Folsom points; 11 casts of Folsom and Yuma points—Clovis, New Mexico (exchange).

WILSON, SAMUEL E., Chicago: 1 Chinese manuscript—Tunhuang, Kansu, China (purchase).

DEPARTMENT OF BOTANY—ACCESSIONS

ACADEMY OF NATURAL SCIENCES, Philadelphia, Pennsylvania: 50 specimens of algae (gift); 13 plant specimens, 38 cryptogamic specimens (exchange).

ADCOCK, CAPTAIN THOMAS A., College Station, Texas: 12 wood specimens (gift).

ALLEN, PAUL H., Balboa, Canal Zone: 223 specimens of Panama plants (gift).

ARCHER-DANIELS MIDLAND COMPANY, Chicago: 42 samples of soybean products (gift).

ARKANSAS AGRICULTURAL AND MECHANICAL COLLEGE (Department of Botany), Monticello, Arkansas: 576 specimens of Arkansas plants (gift).

ARNOLD ARBORETUM, Jamaica Plain, Massachusetts: 752 plant specimens (exchange).

ARTAMANOFF, MR. and MRS. GEORGE, Philadelphia, Pennsylvania: 33 wood specimens (gift).

BANGHAM, WALTER N., Ashmont, Massachusetts: 1 plant specimen (gift).

BAUER, BILL, Webster Groves, Missouri: 22 specimens of Missouri plants (gift).

BLAKE, EMMET R., Chicago: 1 plant specimen (gift).

BLOMQUIST, DR. HUGO L., Durham, North Carolina: 2 cryptogamic specimens (gift).

BOLD, DR. HAROLD C., New York: 43 specimens of algae (gift); 20 specimens of algae (exchange).

BONDAR, DR. GREGORIO, Bahia, Brazil: 6 palm specimens, 7 economic specimens, 20 photographs, 5 publications (gift).

BOULTON, RUDYERD, Chicago: 12 plant specimens (gift).

BRACELIN, MRS. H. P., Berkeley, California: 4 plant specimens (gift).

BRIGHAM YOUNG UNIVERSITY (Department of Botany), Provo, Utah: 11 plant specimens (gift).

BROMUND, DR. E. F., Mount Pleasant, Michigan: 1 plant specimen (gift).

BROOKLYN BOTANIC GARDEN, Brooklyn, New York: 1 plant specimen (exchange).

BUTCHER, DEVEREUX, Washington, D.C.: 20 cryptogamic specimens (gift).

BYRNES, SISTER MARY LEO, Atlantic City, New Jersey: 1 cryptogamic specimen (gift).

CALIFORNIA ACADEMY OF SCIENCES, San Francisco, California: 2 plant specimens (gift); 243 plant specimens (exchange).

CARNEGIE INSTITUTION OF WASHINGTON (Division of Plant Biology), Stanford University, California: 121 plant specimens (gift).

CAYLOR, DR. R. L., Cleveland, Mississippi: 6 specimens of algae (gift).

CHANDLER, A. C., Kirkwood, Missouri: 2 specimens of ferns (gift).

CLARK, DR. H. WALTON, San Francisco, California: 1 plant specimen (gift).

CLEMENS, MRS. MARY S., Lae, Morobe, New Guinea: 1 plant specimen (gift).

CLOVER, DR. ELZADA U., Ann Arbor, Michigan: 20 specimens of algae (gift).

CONARD, DR. HENRY C., Grinnell, Iowa: 80 specimens of hepaticae (gift).

COOKE, DR. WILLIAM BRIDGE, San Francisco, California: 4 specimens of algae (gift); 197 specimens of California plants (exchange).

COOPER, I. C. G., Westerleigh, Staten Island, New York: 2 specimens of algae (gift).

CORY, V. L., Sonora, Texas: 4 plant specimens (gift).

COVINGTON, D. M., La Grande, Washington: 1 log, 2 boards of alder (gift).

CROSBY, MISS GRACE, Providence, Rhode Island: 1 plant specimen (gift).

CUTLER, DR. HUGH, St. Louis, Missouri: 193 plant specimens (gift).

DAHLGREN, DR. B. E., Chicago: 4 ivory nut carvings; a collection of palms and economic specimens (gift).

DAILY, WILLIAM A., Cincinnati, Ohio: 143 specimens of algae (gift).

DASTON, JOSEPH, Chicago: 2 specimens of cacti (gift).

DAVIS, PROFESSOR RAY J., Pocatello, Idaho: 49 specimens of Idaho plants (gift).

DEAM, CHARLES C., Bluffton, Indiana: 10 plant specimens (gift).

DEEVEY, E. S., JR., Houston, Texas: 40 specimens of algae (gift).

DEMAREE, DR. DELZIE, Monticello, Arkansas: 204 specimens of Arkansas plants (gift).

DEVERELL, MRS. A. C., Chicago: 1 head made of Kauri gum (gift).

DONALDSON, MRS. D. M., Aligarh, United Provinces, India: 162 plant specimens, 41 specimens of drug materials (gift).

DREW, DR. WILLIAM B., Columbia, Missouri: 1 cryptogamic specimen (gift).

DROUET, DR. FRANCIS, Chicago: 848 specimens of cryptogams (gift).

DUKE UNIVERSITY (Department of Botany), Durham, North Carolina: 12 plant specimens (exchange).

DYBAS, HENRY S., Chicago: 73 specimens of cryptogams (gift).

ELIAS, REV. BROTHER, Caracas, Venezuela: 398 specimens of Venezuelan plants (gift).

ESCUELA NACIONAL DE AGRICULTURA, Chimaltenango, Guatemala: 54 specimens of Guatemalan plants (gift).

FERREIRA, PROFESSOR RAMON, Lima, Peru: 1 plant specimen (gift).

FIELD, DR. HENRY, Washington, D.C.: 25 specimens of cryptogams (gift).

FIELD MUSEUM OF NATURAL HISTORY:

Collected by Francis Drouet, Donald Richards and others (Field Museum Cryptogamic Expedition to California, 1941): about 8,000 specimens of cryptogams from Colorado, Utah, Nevada and California.

Collected by Leon Mandel Galapagos Expedition: 2 plant specimens.

Collected by Dr. Francis W. Pennell (Marshall Field Fund, South American Expedition, 1925): 120 specimens of plants from Peru, Bolivia and Chile.

Collected by Paul C. Standley (Botanical Expedition to Guatemala, 1940-41): 88,000 specimens of Guatemalan plants.

Collected by Dr. Julian A. Steyermark: 1,000 specimens of Missouri plants.

Collected by Professor Juvenal Valerio R.: 249 specimens of Costa Rican plants.

Collected by Llewelyn Williams: 2,085 specimens of plants from Venezuela.

Transferred from Department of Geology: 7 fossilized wood specimens.

Purchases: 2,420 cryptogamic specimens; 88 plant specimens, 18 photographs—Brazil; 375 plant specimens—

British Honduras and Mexico; 1,216 plant specimens—Costa Rica; 1,416 plant specimens—Mexico; 38 plant specimens—Panama.

FLORISTS' PUBLISHING COMPANY, Chicago: 2 plant specimens (gift).

FOX, DR. LAURETTA B., Natchitoches, Louisiana: 3 specimens of algae (gift).

FRYE, DR. THEODORE C., Seattle, Washington: 12 specimens of bryophytes (exchange).

GARRETT, PROFESSOR ARTHUR O., Salt Lake City, Utah: 100 specimens of Utah plants (gift).

GERDEMANN, JAMES, Warrenton, Missouri: 7 plant specimens (gift).

GLIDDEN COMPANY, THE (Soya Products Division), Chicago: 10 specimens of soybean products (gift).

GOSHORN, H., Hillside, Illinois: 1 specimen of fungus (gift).

GOULD, FRANK W., St. George, Utah: 100 specimens of Pacific coast plants (exchange).

GRAHAM, DR. V. O., Chicago: 102 specimens of fungi (gift).

GRAY, MISS NETTA E., Urbana, Illinois: 100 specimens of algae (gift).

GRAY HERBARIUM, Cambridge, Massachusetts: 18 photographs, 261 plant specimens (exchange).

GREENBERG, ALBERT, Tampa, Florida: 1 plant specimen (gift).

GREGG, MAJOR CLIFFORD C., Chicago: 6 cryptogamic specimens (gift).

GRIFFIN, DR. LAWRENCE E., Portland, Oregon: 12 cryptogamic specimens (gift).

GROESBECK, DR. M. J., Porterville, California: 189 specimens of algae (gift).

HANNA, DR. LEO, Centralia, Washington: 1 plant specimen (gift).

HARPER, DR. ROLAND M., University, Alabama: 64 specimens of Alabama plants (gift).

HERBARIO NACIONAL DE VENEZUELA, Caracas, Venezuela: 4 plant specimens (gift).

HERMANN, DR. FREDERICK J., Washington, D.C.: 45 plant specimens (exchange).

HERPERS, HENRY, Short Hills, New Jersey: 1 cryptogamic specimen (gift).

HOLLENBERG, DR. GEORGE J., Redlands, California: 104 specimens of algae (exchange).

HOOGSTRAAL, DR. HARRY, Urbana, Illinois: 1,732 specimens of Mexican plants (gift).

HUNNEWELL, FRANCIS W., Wellesley, Massachusetts: 3 plant specimens (gift).

ILLINOIS STATE MUSEUM, Springfield, Illinois: 437 specimens of Illinois plants (gift).

INSTITUT BOTANIQUE, UNIVERSITÉ DE MONTRÉAL, Montreal, Canada: 70 specimens of cryptogams (exchange).

INSTITUTO DE CIENCIAS NATURALES, Bogotá, Colombia: 2 plant specimens (gift).

INSTITUTO DEL MUSEO (Department of Botany), La Plata, Argentina: 61 specimens of Argentinean plants (gift); 57 specimens of Argentinean plants (exchange).

INSTITUTO MIGUEL LILLO, Tucumán, Argentina: 2,256 specimens of Argentinean plants (exchange).

JOHNSTON, DR. JOHN R., Chimaltenango, Guatemala: 102 specimens of Guatemalan plants (gift).

JUNGE, DR. CARLOS, Concepción, Chile: 30 plant specimens (gift).

KAHL, EDWARD, Chicago: 4 specimens of soybean products (gift).

KENOYER, PROFESSOR LESLIE A., Kalamazoo, Michigan: 21 specimens of Mexican plants (gift).

KIENER, DR. WALTER, Lincoln, Nebraska: 447 specimens of algae (gift).

KING, LAWRENCE J., Chicago: 150 specimens of algae (gift).

KLEEREKOPER, DR. HERMAN, São Paulo, Brazil: 45 specimens of algae (gift).

KOCH, HERBERT L., Princeton, Missouri: 2 plant specimens (gift).

KRUKOFF, BORIS A., New York: 1,146 wood specimens (exchange).

LANGLOIS, A. C., Nassau, Bahamas: 4 plant specimens, 59 photographs (gift).

LANKESTER, C. H., Cartago, Costa Rica: 1 plant specimen (gift).

LANOUEITE, Mlle CECILE, Montreal, Canada: 2 specimens of algae (gift).

LAWRANCE, ALEXANDER E., Barinas, Venezuela: 1 plant specimen (gift).

LIGGETT, WILLIAM E., University City, Missouri: 7 plant specimens (gift).

LINDAUER, DR. V. W., Awanui, Far North, New Zealand: 43 specimens of algae (gift).

LUMMIS, PRIVATE S. B., Camp Blanding, Florida: 1 plant specimen (gift).

MCBRYDE, DR. F. WEBSTER, Berkeley, California: 29 specimens of Mexican plants (gift).

MCFARLIN, JAMES B., Sebring, Florida: 4 plant specimens (gift).

MADDOX, R. S., Jefferson City, Missouri: 1 plant specimen (gift).

MALDONADO, PROFESSOR ANGEL, Lima, Peru: 76 cryptogamic specimens (gift).

MEYER, PROFESSOR TEODORO, Tucumán, Argentina: 16 plant specimens (gift).

MILWAUKEE PUBLIC MUSEUM, Milwaukee, Wisconsin: 225 specimens of Wisconsin plants (exchange).

MISSOURI BOTANICAL GARDEN, St. Louis, Missouri: 47 specimens of cryptogams, 270 specimens of plants from Panama (exchange).

MONTANA STATE UNIVERSITY (Herbarium), Missoula, Montana: 5 specimens of algae (exchange).

MOORE, GEORGE, Sullivan, Missouri: 20 plant specimens (gift).

MOORE, HAROLD H., Notre Dame, Indiana: 1 plant specimen (gift).

MORGAN, REV. MICHAEL, St. Bernard, Alabama: 4 plant specimens (gift).

MUSEO NACIONAL, San José, Costa Rica: 649 specimens of Costa Rican plants (gift).

NEW YORK BOTANICAL GARDEN, New York: 758 specimens of cryptogams (exchange).

NORTHROP KING AND COMPANY, Minneapolis, Minnesota: 9 ears of hybrid corn (gift).

OSORIO TAFALL, B. F., Mexico City, Mexico: 1 cryptogamic specimen (gift).

PACHECO H., MARIANO, Guatemala City, Guatemala: 59 photographic prints (gift).

PALMER, DR. C. MERVIN, Indianapolis, Indiana: 23 specimens of algae (gift).

PEARSALL, GORDON, Chicago: 16 plant specimens (gift).

PEGGS, DR. A. DEANS, Nassau, Bahamas: 2 plant specimens (gift).

PIERCE, DR. E. LOWE, Welaka, Florida: 7 specimens of algae (gift).

PITTIER, PROFESSOR HENRY, Caracas, Venezuela: 133 specimens of Venezuelan plants (gift).

PONCE, JOSÉ M., Mexico City, Mexico: 37 specimens of Mexican plants (gift).

PRESCOTT, DR. G. W., Albion, Michigan: 32 specimens of algae (gift).

PURDUE UNIVERSITY (Department of Botany), Lafayette, Indiana: 6 plant specimens (gift).

REED, CLYDE T., Gregory, Texas: 49 specimens of cryptogams (gift); 85 specimens of cryptogams (exchange).

REINHARD, DR. E. G., Washington, D.C.: 4 specimens of algae (gift).

RICHARDS, DONALD, Chicago: 981 specimens of cryptogams (gift).

RODGERS, MRS. CHARLES, Highland Park, Illinois: 1 plant specimen (gift).

ROSENGURTT, PROFESSOR BERNARDO, Montevideo, Uruguay: 15 plant specimens (gift).

RUNK, DR. B. F. D., Charlottesville, Virginia: 195 specimens of algae (exchange).

RUNYON, ROBERT, Brownsville, Texas: 209 specimens of Texas plants (exchange).

RUTGERS COLLEGE (Department of Botany), New Brunswick, New Jersey: 88 specimens of Costa Rican plants (gift).

SCHMIDT, ERICH F., Chicago: 37 specimens of plants from Iran (gift).

SCHMIDT, KARL P., Homewood, Illinois: 2 cryptogamic specimens (gift).

SCHNEIDER, RICHARD A., Kankakee, Illinois: 16 specimens of Illinois plants (gift).

SCIENTIFIC OIL COMPOUNDING COMPANY, INC., Chicago: 2 specimens of vegetable oils (gift).

SELLA, EMIL, Chicago: 5 plant specimens (gift).

SHERFF, DR. EARL E., Chicago: 118 plant specimens (gift).

SMITH, DR. GILBERT M., Stanford University, California: 1 cryptogamic specimen (gift).

SOLHEIM, DR. W. G., University of Wyoming, Laramie, and WILLIAM A. DAILY, Cincinnati, Ohio: 96 specimens of algae—Wyoming (gift).

SOUKUP, PROFESSOR J., Lima, Peru: 135 specimens of Peruvian plants (gift).

SOUZA-NOVELO, DR. NARCISO, Mérida, Yucatán, Mexico: 34 specimens of Yucatán plants (gift).

SOY-BEAN PRODUCTS COMPANY, Chicago: 13 samples of soybean food products (gift).

STALEY MANUFACTURING COMPANY, A. E., Chicago: 1 sample of soy sauce (gift).

STANDLEY, PAUL C., Chicago: 8 plant specimens (gift).

STANDLEY, PAUL C., Chicago, and DR. JULIAN A. STEYERMARK, Barrington, Illinois: 2,000 plant specimens (gift).

STEVENS, DR. ORIN A., Fargo, North Dakota: 1 plant specimen (gift).

STEYERMARK, DR. and MRS. JULIAN A., Barrington, Illinois: 2 specimens of algae (gift).

STRICKLAND, J. C., Charlottesville, Virginia: 115 specimens of algae (exchange).

TAFT, DR. CLARENCE E., Columbus, Ohio: 1 cryptogamic specimen (gift).

TAYLOR, DR. WILLIAM R., Ann Arbor, Michigan: 12 specimens of algae (gift).

TEXAS AGRICULTURAL EXPERIMENT STATION, Temple, Texas: 329 specimens of Texas and Arizona plants (exchange).

TRESSLER, DR. WILLIS L., College Park, Maryland: 7 specimens of algae (gift).

TRYON, DR. ROBERT M., JR., Free-landville, Indiana: 400 specimens of Indiana plants (exchange).

TURNQUIST, DONALD, Cedar Lake, Indiana: 1 wood specimen (gift).

UNITED STATES DEPARTMENT OF AGRICULTURE (National Arboretum), Washington, D.C.: 263 plant specimens (exchange).

UNITED STATES DEPARTMENT OF AGRICULTURE (Forest Products Laboratory), Madison, Wisconsin: 1 plant specimen (gift).

UNITED STATES FISHERIES LABORATORY, Logan, Utah: 220 specimens of algae (gift).

UNITED STATES NATIONAL MUSEUM, Washington, D.C.: 57 cryptogamic specimens (gift); 50 cryptogamic specimens, 150 photographic prints, 325 specimens of Central and South American plants (exchange).

UNIVERSITY OF CALIFORNIA (Department of Botany), Berkeley, California: 5 plant specimens, 55 cryptogamic

specimens (gift); 842 cryptogamic specimens (exchange).

UNIVERSITY OF CHICAGO (Department of Botany), Chicago: 7,285 specimens of fungi (gift).

UNIVERSITY OF ILLINOIS (Department of Botany), Urbana, Illinois: 1 plant specimen (gift).

UNIVERSITY OF KENTUCKY (Department of Botany), Lexington, Kentucky: 1 plant specimen (gift).

UNIVERSITY OF MICHIGAN (Herbarium), Ann Arbor, Michigan: 335 specimens of cryptogams, 620 plant specimens (exchange).

UNIVERSITY OF PENNSYLVANIA (Department of Botany), Philadelphia, Pennsylvania: 116 specimens of plants (exchange).

UNIVERSITY OF THE PHILIPPINES, Department of Botany, Manila, Philippine Islands: 212 specimens of algae (exchange).

UTAH STATE AGRICULTURAL COLLEGE, Logan, Utah: 153 photographic prints of asters (exchange).

VARGAS G., DR. CESAR, Cuzco, Peru: 64 plant specimens, 15 ears of Peruvian corn (gift).

VATTER, ALBERT, Glenview, Illinois: 7 plant specimens (gift).

VAUGHAN'S SEED STORE, Chicago: 1 plant specimen (gift).

VOGL, REV. PADRE CORNELIUS, Caracas, Venezuela: 638 specimens of Venezuelan plants (gift).

WALP, DR. LEE, Marietta, Ohio: 68 specimens of algae (gift).

WANGER, KENNETH A., O'Neals, California: 2 plant specimens (gift).

WELCH, DR. W. B., Carbondale, Illinois: 6 cryptogamic specimens (gift).

WELCH, DR. WINONA H., Greencastle, Indiana: 51 specimens of mosses (exchange).

WELSH, J. L., Laclede, Missouri: 5 plant specimens (gift).

WEYERHAEUSER TIMBER COMPANY, Longview, Washington: 3 specimens of Sitka spruce (gift).

WHEELER, DR. LOUIS C., Philadelphia, Pennsylvania: 1 cryptogamic specimen (gift).

WHITE RIVER LUMBER COMPANY, Enumclaw, Washington: 1 log section, 1 flitch (gift).

WILLIAMS, LLEWELYN, Chicago: 1 specimen of Ceroxylon wax, 6 plant specimens (gift).

WINDSOR, A. S., Chicago: 1 plant specimen (gift).

WOLF, REV. BROTHER WOLFGANG, St. Bernard, Alabama: 1 plant specimen (gift).

WOLLE, PHILIP W., Princess Anne, Maryland, and DR. FRANCIS DROUET, Chicago: 164 specimens of cryptogams (gift).

WOOD, CARROLL E., JR., Philadelphia, Pennsylvania: 1 cryptogamic specimen (gift).

WOOD-MOSAIC COMPANY, Louisville, Kentucky: 2 specimens of Claro walnut (gift).

WOODWORTH, DR. R. H., Bennington, Vermont: 274 specimens of plants from the Virgin Islands (gift).

WOYTKOWSKI, FELIX, Lima, Peru: 38 specimens of Peruvian plants (gift).

YALE UNIVERSITY (School of Forestry), New Haven, Connecticut: 4 plant specimens (gift); 905 wood specimens (exchange).

YUNCKER, PROFESSOR TRUMAN G., Greencastle, Indiana: 3 plant specimens (gift).

ZETEK, JAMES, Balboa, Canal Zone: 22 specimens of Panama plants (gift).

DEPARTMENT OF GEOLOGY—ACCESSIONS

ADLE, MARSHALL J., Mishawaka, Indiana: 1 specimen of halloysite var. indianite—Lawrence County, Indiana (gift).

BARBER, C. M., Hot Springs, Arkansas: 9 specimens of fossil vertebrates—Arkansas (gift).

BARNES, O. C., Los Angeles, California: 1 Mexican onyx cross—Death Valley, California (gift).

BARTON, DR. R. F., Manila, Philippine Islands: 12 specimens of tektites—Batabolani, Camarines Norte, Philippine Islands (gift).

BASCOM, WILLARD, Golden, Colorado: 2 specimens of rare minerals—Colorado (gift).

BECKER, A. H., Madison, Wisconsin: 6 specimens of anorthoclase moonstone—Wausau, Wisconsin (gift).

BOOMER, DR. PAUL C., Chicago: 24 gems—various localities (gift).

BUTRIM, JOHN, Golden, Colorado: 1 specimen of talctriphylite—Canon City, Colorado (gift).

CALVERT, EARL L., San Gabriel, California: 3 specimens of minerals—Mexico (exchange).

CHAPMAN, FRANCIS B., Los Angeles, California: 1 specimen of molybdenite ore, 1 specimen of beryllium oxide—San Diego County, California (gift).

COONLEY, MRS. JOHN STUART, Chicago: 85 mineral specimens, 1 invertebrate fossil—various localities (gift).

CRANE, MRS. RICHARD T., JR., Chicago: collection of gems—various localities (gift).

DEMPSTER, MRS. MARY GILLETTE, Chicago: 4 geological specimens—various localities (gift).

FABER, EDWIN B., Grand Junction, Colorado: 3 specimens of fossil shark and ray in matrix—Hotchkiss, Colorado (gift).

FIELD MUSEUM OF NATURAL HISTORY:

Collected by Dr. Sharat K. Roy and Henry Herpers (Field Museum Geological Expedition to Eastern United States, 1940): 1 specimen of muscovite in pegmatite—Portland, Connecticut.

Collected by Bryan Patterson, James H. Quinn, Edwin Galbreath and Robert Schmidt (Field Museum Paleontological Expeditions to Colorado, 1939 and 1941): 103 specimens of fossil plants and invertebrate fossils—Colorado.

Collected by Paul O. McGrew (Field Museum Paleontological Expedition to South Dakota, 1940): 2 composite skeletons of *Aletomeryx*, miscellaneous quarry material consisting of various skeletal bones—Gordon, Nebraska.

Collected by Ronald Lambert (Leon Mandel Galapagos Expedition): 7 specimens of lava—Galapagos Islands.

Transferred from the Department of Anthropology: skull and jaws of *Eporeodon major*.

Transferred from the Department of Zoology: 4 mammal skulls.

Made in Vertebrate Paleontological Laboratory: 2 casts from dentition of *Didymictis protenus* and *Oxyaena*.

Purchases: 7 specimens of meteorites—United States; skeleton of *Tylosaurus*—Kennebec, South Dakota.

FRIEDMAN, MRS. ABE, Rapid City, South Dakota: 2 specimens of calcite crystals—near Rapid City, South Dakota (gift).

GABRIEL, DON, Detroit, Michigan: 1 specimen of brown fluorite and celestite—Clay Center, Ohio (exchange).

GALBREATH, EDWIN C., Ashmore, Illinois: 3 specimens of vertebrate fossils—vicinity of Ashmore, Illinois (gift).

GENERAL REFRACTORIES COMPANY, Chicago: 10 refractories (gift).

GENTZ, O. A., Chicago: 1 specimen of thomsonite—near Duluth, Minnesota (gift).

GLEASON, CEDRIC M., Washington, D.C.: 2 turquoise specimens—Lynch Station, Virginia (gift).

GRESKY, DR. BENEDICT, Chicago: 4 step-cut white beryls (gift).

GULON, STEVEN, Chicago: 1 Mexican onyx heart—San Rafael, Argentina (gift).

HARTFORD-EMPIRE COMPANY, Hartford, Connecticut: 1 pseudo-meteorite (gift).

HODSON, GLEN H., Elmhurst, Illinois: 16 mineral specimens—various localities (exchange).

HOGLE, CLARON, Duluth, Minnesota: 1 specimen of thomsonite—Lake Superior (gift).

HOLT, EDWARD L., Grand Junction, Colorado: 110 fossil shells—Grand Junction, Colorado (gift); 2 mineral specimens—Utah (gift).

JACKLEY, A. M., Pierre, South Dakota: 1 physical geology specimen—Cheyenne River, South Dakota (gift).

JENNINGS, JOHN W., Eureka Springs, Arkansas: 2 mineral specimens—Eureka Springs, Arkansas (gift).

KONSBERG, A. V., Chicago: 1 chert boulder—near Austin, Texas (gift).

LEE, HENRY E., Rapid City, South Dakota: 1 specimen of algal agate—Black Hills, South Dakota (gift).

MATHER, BRYANT, JR., Chicago: 2 specimens of orthoclase—Virginia and North Carolina (gift).

MEADE, GRAYSON, Austin, Texas: type specimen of species of erinaceid—Marshland, Nebraska (exchange).

MENZEL, WILLIAM E., Chicago: 29 onyx marble cabochons—various localities (gift).

MORONEY, JOHN J., AND COMPANY, Chicago: 19 specimens of refractories (gift).

NICHOLS, HENRY W., Chicago: 6 specimens illustrating uses of fluorite and nitrates (gift).

NININGER, DR. H. H., Denver, Colorado: 1 polished slice of Wiley meteorite—Wiley, Colorado (exchange).

PUCETTI, S. C., Chicago: 1 quartz-filled chalcedony geode—Cuba, Illinois (gift).

QUINN, MRS. CLAYTON, Ainsworth, Nebraska: 1 tooth of fossil elephant, *Stegomastodon primitivus*—Ainsworth, Nebraska (exchange).

QUINN, JAMES H., Chicago: skeleton of fossil rhinoceros, *Teleoceras*—Ainsworth, Nebraska (gift).

RICHMAN, A. G., La Crosse, Wisconsin: 1 insect in copal—Africa (gift).

RIES, REV. MICHAEL M., Chicago: 5 geodes and parts of geodes—Iowa (gift).

RINEHART, WILLIAM G., Batesville, Arkansas: 5 mineral specimens—Batesville, Arkansas (gift).

RYLAND, CHARLES S., Golden, Colorado: 3 mineral specimens—New Mexico (gift).

SALO, O. J., Red Lodge, Montana: 8 specimens of dahlite—Lovell, Wyoming (gift).

SARGENT, E. H., AND COMPANY, Chicago: 7 specimens of refractories (gift).

SIMMONS, CORBETT, Elberton, Georgia: 1 specimen of meteorite, 1 specimen of meteorite shale—Smithsonia, Georgia (gift).

SKELLY, JOHN, South Milwaukee, Wisconsin: 4 specimens of nickel ore—Ontario, Canada (gift).

UNITED STATES GYPSUM COMPANY, Chicago: 8 specimens of sheet rock (gift).

UNIVERSITY OF CHICAGO, Chicago: skull and jaws of *Eporeodon*—Hat Creek Basin, Wyoming (gift); 1 mountable skeleton of *Pareiosaurus*—South Africa (exchange).

THACKER, MRS. CLARICE, Woodstock, Illinois: 6 specimens of *Equus*—Woodstock, Illinois (gift).

WAGNER, MISS SHERKY, Northfield, Illinois: 1 specimen of pyrite and marcasite—Northfield, Illinois (gift).

DEPARTMENT OF ZOOLOGY—ACCESSIONS

ACADEMY OF NATURAL SCIENCES, Philadelphia, Pennsylvania: 1 coral snake—Peru (exchange).

AMERICAN MUSEUM OF NATURAL HISTORY, New York: 2 lots of tadpoles—China (gift); 2 rodents, 3 bird skins, 5 alligators—various localities (exchange).

ANDERSON, ARTHUR C., Chesterton, Indiana: 1 massasauga—Indiana (gift).

ARMOUR, P. D., Lake Bluff, Illinois: 1 snake—Lake Bluff, Illinois (gift).

ARMSTRONG, URSEL S., Berkeley, California: 26 insects—Arabia (gift).

BAERG, DR. W. J., Fayetteville, Arkansas: 2 scorpions—Mexico (gift).

BARBER, C. M., Hot Springs, Arkansas: 45 salamanders, 4 lizards, 7 snakes, 2 box turtles, 1 tortoise skeleton—Arkansas (gift).

BARD, F. N., Chicago: 1 mounted bear—British Columbia (gift).

BARGER, DR. J. D., Linton, North Dakota: 1 wildcat skin—Arabia (gift).

BASCOM, MRS. ERIKA, Evanston, Illinois: 5 lizards—Morelos, Mexico (gift).

BECKER, ROBERT H., Chicago: 1 albino crow—Richmond, Illinois (gift).

BEECHER, WILLIAM J., Chicago: 5 fishes, 204 insects—Chicago region (gift).

BESSOM, LEONARD C., Los Angeles, California: 20 beetles—Ellsworth, Kansas (gift).

BEST, MISS ELIZABETH, Glencoe, Illinois: 1 pseudoscorpion—Glencoe, Illinois (gift).

BEST, MRS. E. O., Glencoe, Illinois: 1 camel cricket—Glencoe, Illinois (gift).

BISHOP, DR. LOUIS B., Pasadena, California: 1,180 bird skins—North America (gift).

BISHOP, DR. SHERMAN C., Rochester, New York: 40 salamanders—various localities (exchange).

BRAIDWOOD, ROBERT J., Chicago: 94 shells—Syria (exchange).

BREDER, CHARLES, New York: 60 fishes—Lee County, Florida (gift).

BRISCOE, M. S., Harpers Ferry, West Virginia: 4 beetles—Harpers Ferry, West Virginia (gift).

BROMUND, E. FRED, Mount Pleasant, Michigan: 48 land and fresh-water shells—Cheboygan, Michigan (gift).

BROWN, MRS. A. W., Port Isabel, Texas: 6 marine shells, 1 marine worm—Port Isabel, Texas (gift).

BROWN, MR. and MRS. L. F., Naples, Florida: 1 manatee skull, 4 duck skins, 1 fish, 1 spider—Florida (gift).

BROWN, BRYCE C., Austin, Texas: 1 coral snake—Texas (gift).

BROWN, LAWRENCE F., Naples, Florida: 60 tree-snails—southern Florida (gift).

BURTON, ROBERT A., Evanston, Illinois: 38 salamanders, 20 frogs, 14 snakes, 2 turtles—Iowa (gift).

CAMPBELL, GEORGE R., Rio Piedras, Puerto Rico: 1 lot of tadpoles, 2 frog embryos, 1 frog, 47 lizards, 3 snakes—Puerto Rico (gift).

CARLSON, MISSES RUTH and ELLEN, Glen Ellyn, Illinois: 1 pedigreed Manx cat (gift).

CARNEGIE MUSEUM, Pittsburgh, Pennsylvania: 2 sharp-tailed sparrows—South Carolina and Florida (exchange).

CHICAGO ACADEMY OF SCIENCES, Chicago: 1 water snake—Texas; 10 bat-fleas—various localities (gift).

CHICAGO ZOOLOGICAL SOCIETY, Brookfield, Illinois: 23 mammals, 148 birds, 1 lizard, 15 snakes, 1 turtle—various localities (gift).

CHRISTENSEN, REGNAR BANG, New York: 1 European swallow—western Greenland (gift).

CIESLAK, EDWIN S., Chicago: 234 garter snake skins—Illinois and Washington (gift).

CLARK, MISS EMILY A., Wushishi, Nigeria: 1 moth cocoon—Nigeria (gift).

CLARK, P. J. and R. INGER, South Haven, Michigan: 1 snake—Georgia (gift).

CLARK, DR. W. G., Minneapolis, Minnesota: 2 toads—Santiago, Cuba (gift).

COLE, LAMONTE C., Chicago: 4 land shells—Illinois (gift).

COLORADO MUSEUM OF NATURAL HISTORY, Denver, Colorado: 1 lizard—Bahama Islands (gift).

COLTON, MRS. THERON, Chicago: 1 marsh hawk—Chicago (gift).

CONOVER, BOARDMAN, Chicago: 1 bat skin and skull, 554 bird skins, 1 bird sternum—various localities (gift).

CORY, CHARLES BARNEY, Homewood, Illinois: 1 sora rail—Homewood, Illinois (gift).

COWEN, DR. JACK P., Chicago: 1 brown creeper—Chicago (gift).

CRANDALL, ROBERT H., Tucson, Arizona: 48 insects—various localities (exchange).

CRESSMAN, HARRY, St. Charles, South Dakota: 3 lizards, 1 snake—South Dakota (gift).

CURTIS, KENNETH, Chicago: 11 fishes—Guaymas, Mexico (gift).

DAVIS, DR. DAVID, Rio de Janeiro, Brazil: 4 birds—British Guiana (gift).

DAVIS, D. DWIGHT, Naperville, Illinois: 6 small mammal skins and skulls, 1 spider—Colorado; 51 snakes—Illinois (gift).

DAVIS, W. B., College Station, Texas: 43 birds—Mexico (exchange).

DEMAREE, DR. DELZIE, Monticello, Arkansas: 16 snakes—Arkansas (gift).

DRENDEL, MISS MARY, Naperville, Illinois: 1 bull snake—Illinois (gift).

DYBAS, HENRY S., Chicago: 627 insects and allies—various localities (gift).

DYBAS, MRS. MILADA, Chicago: 2 birds—Chicago (gift).

EASTER, GEORGE, Chicago: 12 weevils—Illinois (gift).

EDGERLEY, HATTON, De Beque, Colorado: 6 insects—Colorado (gift).

EIGSTI, W. E., Chicago Heights, Illinois: 1 rat, 1 beetle, 5 parasitical roundworms—Chicago Heights, Illinois (gift).

EMERSON, DR. ALFRED E., Chicago: 1 snake—Florida (gift).

FIELD, DR. HENRY, Washington, D.C.: 1 Fowler's toad, 281 insects and allies, 5 jelly fishes, 1 land shell—various localities (gift).

FIELD MUSEUM OF NATURAL HISTORY:

Collected by Emmet R. Blake: 3 young grebes—Illinois.

Collected by Emmet R. Blake and Melvin A. Traylor, Jr. (Southwest Zoological Expedition): 19 mammals, 177 birds, 50 sets of birds' eggs, 85 bird nests, 35 bird skeletons, 3 salamanders, 40 frogs, 32 lizards, 6 snakes—various localities.

Collected by Dr. Francis Drouet (Field Museum Expedition to Sonora

and Southwestern United States, 1939-40): 159 marine and fresh-water shells southwestern United States and northern Mexico.

Collected by Henry S. Dybas: 103 insects and close allies—Illinois.

Collected by W. E. Eigsti: 24 mammals—Illinois.

Collected by Albert J. Franzen and W. E. Eigsti: 2 mammals—Illinois.

Collected by William J. Gerhard and Rupert L. Wenzel: 165 bird lice—various localities.

Collected by Dr. Fritz Haas (Pacific Coast Zoological Expedition): 1 lizard, 15 fishes, 3,000 marine invertebrates—coast of California.

Collected by Dr. Wilfred H. Osgood, Rudyerd Boulton, Loren P. Woods, Leon L. Walters, Melvin Traylor, Jr. and Ronald Lambert (Leon Mandel Galapagos Expedition): 19 mammal skins and skulls, 8 separate mammal skulls, 429 bird skins, 3 sets of eggs, 3 bird nests, 3 bird skeletons, 3 lots of birds in alcohol, 1 toad, 138 lizards, 5 snakes, 1 turtle, 1,955 fishes, 280 insects and allies, 400 miscellaneous invertebrates—various localities.

Collected by Bryan Patterson and James H. Quinn (Field Museum Paleontological Expedition to Western Colorado): 73 insects, 36 land shells—Colorado.

Collected by Bryan Patterson and John M. Schmidt (Field Museum Paleontological Expedition to Western Colorado): 14 lizards, 10 snakes—Colorado.

Collected by Clifford H. Pope and family: 5 snakes—Illinois.

Collected by Karl P. Schmidt: 12 tongue worms—various localities.

Collected by Karl P. Schmidt and John M. Schmidt (field trip to Arkansas and Texas): 33 salamanders, 59 frogs, 56 lizards, 68 snakes, 29 turtles, 181 insects and allies—southwest; 35 land shells—Texas.

Collected by Karl P. Schmidt and Colin C. Sanborn (Field Museum Magellanic Expedition): 7 fishes—Colombia.

Collected by Paul C. Standley (Stanley Field Botanical Expedition to Guatemala, 1940-41): 35 insects, 22 land and fresh-water shells—Guatemala.

Collected by Alfred C. Weed: 826 fishes, 15 beetles, 48 marine invertebrates—Beaufort, North Carolina.

Collected by Rupert L. Wenzel: 1,281 insects and allies—Chicago region.

Collected by Rupert L. Wenzel and Henry S. Dybas: 867 insects and allies—various localities.

Collected by Frank C. Wonder (Fourth Hoogstraal Mexican Expedition): 251 mammal skins and skulls, 69 mammals in alcohol, 38 mammal skeletons, 1 rattlesnake skull—Mexico.

Purchases: 394 birds—Australia; 67 mammal skins with 58 skulls and 2 skeletons, 4,787 bird skins—Bolivia; 37 mammals, 354 bird skins, 776 beetles—Brazil; 23 lizards—California; 3 puma skins and skulls—Chile; 71 hawks and owls—Colombia; 90 hawks and owls—Ecuador; 745 insects, 5 millipedes, 8 snakes, 2 sharks—Florida; 67 hawks and owls—India; 1 red fox skin and skull—Indiana; 6 alligator snapping turtles and 6 hatchlings—Louisiana; 26 mammal skulls—Maine; 18 hawks and owls—Manchukuo; 15 mammal skins and 14 skulls, 232 birds, 6 frogs, 26 lizards, 226 snakes—Mexico; 50 bird skins—Paraguay; 115 bats in alcohol, 8 tadpoles, 237 frogs, 6 snakes—Peru; 58 hawks and owls—Somaliland and India; 21 snakes—Texas; 17,448 insects and allies—United States and Mexico; 1 mute swan; 101 bird skins, 50 amphibians, 14 lizards, 26 snakes, 9 turtles—various localities; 15,000 beetles—various parts of the world; 1,049 bird skins—West Africa; 2 wolf skeletons—Wisconsin.

FRANZEN, ALBERT J., Chicago: 4 flies—Chicago (gift).

FRIESSER, JULIUS, Chicago: 1 flatfish—Florida; 4 house-flies, 1 fresh-water bryozoan—Illinois (gift).

FRIZZELL, MRS. H. E., Negritos, Peru: 1 lizard, 2 snakes—Pura, Peru (gift).

FROMM BROTHERS, Hamburg, Wisconsin: 5 foxes—Hamburg, Wisconsin (gift).

GEMMILL, MRS. EUNICE, Glen Ellyn, Illinois: 1 screech owl—Glen Ellyn, Illinois (gift).

GENERAL BIOLOGICAL SUPPLY HOUSE, Chicago: 3 injected dogs and cats, 3 injected cat heads; 8 lizards, 18 snakes, 1 crocodilian—South America; 2 beetles, 2 tadpole shrimps—Nevada (gift).

GERHARD, WILLIAM J., Chicago: 51 insects—various localities (gift).

GREENE, W. E., Chicago: 1 lizard, 6 snakes, 1 turtle—Kinston, Alabama (gift).

GREGG, MAJOR CLIFFORD C., Chicago: 1 dog tick—Indiana (gift).

GREY, MRS. MERIAM, Evanston, Illinois: 66 fishes, 31 marine invertebrates—Maryland (gift).

GROSJEAN, MRS. R. O., Fort Wayne, Indiana: 2 mammals—Angola, Indiana (gift).

GUERET, MRS. E. N., Chicago: 4 osteological specimens, 1 horned toad skeleton (gift).

GUNTER, GORDON, Rockport, Texas: 93 fishes—Texas (gift).

HAAS, ERNST B., Chicago: 3 freshwater snails—Forest Lake, Wisconsin (gift).

HAAS, DR. FRITZ, Chicago: 853 marine invertebrates—Maine (gift).

HAAS, DR. GEORG, Jerusalem, Palestine: 1 chameleon—Palestine (gift).

HAAS, ROBERT, Chicago: 6,236 fishes—McHenry County, Illinois (gift).

HANSON, HAROLD, Chicago: 1 meadow mouse—Wisconsin (gift).

HARTNACK EXTERMINATING SERVICE, INC., Chicago: 14 insects—Chicago (gift).

HERTIG, DR. MARSHALL, Lima, Peru: 2 lizards, 1 snake—Peru (gift).

HILDEBRAND, MAJOR R. D., Fort Worth, Texas: 3 duck skeletons—Marion County, Texas (gift).

HOOGSTRAAL, DR. HARRY, Urbana, Illinois: 1 larval salamander—Illinois; 1 snake—Florida; 2 beetles—Maine (gift); 40 insects—Cuba and Mexico (exchange).

HUBRIGHT, LESLIE, St. Louis, Missouri: 6 cave salamanders—Missouri; 4 salamanders, 1 frog, 9 lizards—various localities; 936 fresh-water snails—Ozark Mountains, Missouri and Arkansas (gift).

HUFF, DR. CLAY G., Chicago: 2 blue grouse skins—Montana (gift).

HUNLEY, CARLTON, Thomasville, Georgia: 2 frogs, 1 toad, 1 snake, 1 young turtle—Georgia (gift).

HUNTER, REV. ELLWOOD BRUCE, Pacific Grove, California: 1 chiton—Monterey Peninsula, California (gift).

ILLINOIS DEPARTMENT OF CONSERVATION, Springfield, Illinois: 3 snakes—Illinois (gift).

ILLINOIS STATE NATURAL HISTORY SURVEY, Urbana, Illinois: 2 chalcidflies—Illinois (gift).

INGER, ROBERT, University City, Missouri: 1 gecko—Hawaii (gift).

INSTITUTO BUTANTAN, São Paulo, Brazil: 21 coral snakes—Brazil (gift).

IRELAND, MRS. W. A., Chicago: 10 ticks—Chicago (gift).

JANACEK, JOHN J., Berwyn, Illinois: 27 insects—Chicago (gift).

JELLISON, W. L., Hamilton, Montana: 1 flea—Alaska (gift).

JENNINGS, J. F., Chicago: 1 mountain lion skull—Utah (gift).

JOHNSON, J. E., JR., Waco, Texas: 11 snakes—Texas (gift).

JOHNSON, DR. MURRAY L., Baltimore, Maryland: 2 salamanders—Washington (gift).

KAUFFELD, CARL F., Staten Island, New York: 2 timber rattlesnakes—eastern United States; 4 slides of snake tongue scarfs (gift).

KANAK, E. W., Chicago: 1 hairworm—Chicago (gift).

KELLOGG, ROBERT, Milton Township, Illinois: 12 salamanders, 4 frogs, 1 lizard, 13 snakes—Canada (gift).

KRAHL, REV. ADOLPH M., Yuma, Arizona: 2 rattlesnakes, 3 scorpions—Arizona and California (gift).

KRAMER, THOMAS, Harvey, Illinois: 1 fox squirrel—Homewood, Illinois (exchange).

KURFESS, JOHN, Hinsdale, Illinois: 9 snakes—various localities (gift).

LABONTE, JOHN, Chicago: 1 horned grebe skin—Indiana; 1 beetle—Chicago (gift).

LAMBERT, RONALD J., Zion, Illinois: 1 spider—Zion, Illinois (gift).

LILJEBLAD, EMIL, Villa Park, Illinois: 2,409 insects—California (gift).

LINCOLN PARK ZOO, Chicago: 2 mammals, 1 bird skeleton, 2 skinks, 1 frog, 3 snakes, 1 tortoise, 20 turtle eggs, 1 crocodile—various localities (gift).

LINCOLN SCHOOL, Highland Park, Illinois: 1 wren, 2 bird skeletons—Highland Park, Illinois (gift).

LIX, HENRY and DELZIE DEMAREE, Hot Springs, Arkansas: 5 snakes, 1 box-turtle—Ashley County, Arkansas (gift).

LUETH, F. X., Springfield, Illinois: 1 fox snake—Illinois (gift).

MC ELVARE, ROWLAND R., Long Island, New York: 10 beetles—California (gift).

MALDONADO, PROFESSOR ANGEL, Lima, Peru: 31 fresh-water snails, 49 fairy shrimps—western Peru (gift).

MARIA, BROTHER NICÉFORO, Bogotá, Colombia: 7 bats, skins and skulls, 65 bats in alcohol—Colombia (exchange).

MARTIN, RICHARD A., Wheatfield, Indiana: 1 bull snake—Wheatfield, Indiana (gift).

MARVIN, HORACE M., Madison, Wisconsin: 1 garter snake—Wisconsin (gift).

MATHER, BRYANT, Chicago: 1 snapping turtle—Illinois (gift).

MEADE, GRAYSON, Austin, Texas: 14 lizards, 1 snake—Texas (gift).

MILLER, GEORGE T., South Bend, Indiana: 5 insects—Wyoming (gift).

MOORE, PROFESSOR G. A., Stillwater, Oklahoma: 12 salamanders—Oklahoma (gift).

MOYER, JOHN W., Chicago: 3 birds—Illinois (gift).

MUSEUM OF COMPARATIVE ZOOLOGY, Cambridge, Massachusetts: 2 mammal skins and skeletons, 3 mammal skeletons, 1 lemur in alcohol—various localities; 3 frogs—Peru (exchange).

MUSSELMAN, DR. T. E., Quincy, Illinois: 2 albino English sparrows—Illinois (gift).

NEEDHAM, DR. JAMES G., Ithaca, New York: 131 insects—various localities (exchange).

OLALLA, A. M., São Paulo, Brazil: 43 birds—São Paulo, Brazil (exchange).

OWENS, DAVID W., Flossmoor, Illinois: 4 frogs, 1 box-turtle—Illinois (gift).

PATTERSON, BRYAN, Chicago: 1 red bat—Chicago; 31 fleas—Colorado (gift).

PERKINS, C. B., San Diego, California: 5 garter snakes—California (gift).

PLATH, KARL, Chicago: 1 rifle bird—Australia (exchange).

POND, ALONZO W., Blue Mounds, Wisconsin: 3 vials of springtails—Blue Mounds, Wisconsin (gift).

POPE, ALEXANDER, Winnetka, Illinois: 1 queen snake—Wisconsin (gift).

POPE, CLIFFORD H. and FAMILY, Winnetka, Illinois: 18 frogs, 14 lizards,

6 snakes, 19 turtles—Illinois and Indiana (gift).

POULTER, DR. THOMAS, Chicago: 1 penguin, 4 penguin skeletons—Antarctica (gift); 1 ringed penguin—Antarctica (exchange).

RAHN, DR. HERMANN, Laramie, Wyoming: 2 prairie rattlesnakes—Wyoming (gift).

RAMSTADT, HENRY, Chicago: 28 insects—Wisconsin and Florida (gift).

REED, CLYDE T., Gregory, Texas: 153 fishes—Texas (gift).

ROCKEFELLER FOUNDATION, Washington, D.C.: 11 birds—Brazil (gift).

RUECKERT, ARTHUR G., Chicago: 1 lovebird—Africa (gift).

RUECKERT, MRS. ARTHUR G., Chicago: 2 grasshoppers—Florida (gift).

SCHMIDT, JOHN M., Homewood, Illinois: 29 mammal skins and 34 skulls, 4 mammal skeletons, 2 bats in alcohol, 2 garter snakes—Colorado (gift).

SCHMIDT, KARL P., Homewood, Illinois: 13 bats, 2 bat skeletons, 1 armadillo skull—Texas; 1 marmot skin and skull—Colorado; 2 snakes—Florida; 21 insects—various localities (gift).

SCHMIDT, KARL P., Homewood, Illinois, and D. DWIGHT DAVIS, Naperville, Illinois: 8 snakes, 1 turtle—various localities (gift).

SCHREIBER, JACK, Chicago: 53 bird lice—various localities (gift).

SEEVERS, DR. CHARLES H., Chicago: 169 insects—various localities (gift).

SHAW, DONALD, Homewood, Illinois: 1 fox snake—Illinois (gift).

SHEDD AQUARIUM, JOHN G., Chicago: 2 turtles, 178 fishes—various localities (gift).

SIGISMUND OF PRUSSIA, PRINCESS, Barranca, Costa Rica: 1 bat in alcohol, 1 gecko, 6 snakes—Costa Rica (gift).

SILVANUS, RAYMOND J., Libertyville, Illinois: 1 chimney swift—Libertyville, Illinois (gift).

SIMPSON, JAMES, JR., Chicago: 1 mounted wild sheep head—central Asia (gift).

SMITH, DR. C. S., San Marcos, Texas: 4 snakes—Texas (gift).

SMITH, DONALD M., Chicago: 205 insects—northwestern United States (gift).

SORENSEN, ANDREW, Pacific Grove, California: 3 marine shells—California (gift).

SOUKUP, PROFESSOR J., Lima, Peru: 970 insects—Europe and Peru (gift).

SPRINGER, STEWART, Islamorada, Florida: 1 coral snake—Florida (gift).

SPURLING, M. B., Chicago: 4 beetles—Chicago (gift).

STANDLEY, PAUL C., Chicago: 23 marine shells—Florida; 13 fresh-water shells—Illinois (gift).

STANFORD UNIVERSITY, California: 4 marine bivalves including 2 paratypes—California (exchange).

STATE PARK BOARD OF MISSOURI, Sullivan, Missouri: 1 pine mouse—Missouri (gift).

STEYERMARK, DR. JULIAN A., Barrington, Illinois: 37 fishes—various localities (gift).

STOFFORD, WILLIAM, COMPANY, Beverly, Massachusetts: 1 mackerel jaw-bone (gift).

STROHECKER, DR. H. F., Gambier, Ohio: 1 salamander—Gambier, Ohio (gift).

TEXAS CO-OPERATIVE WILD LIFE RESEARCH UNIT, College Station, Texas: 30 small mammals—Mexico (exchange).

TRENKER, FRANK, Chicago: abnormal pig skull and leg bones (gift).

ULRICH, GLENN, Western Springs, Illinois: 2 snakes—Illinois and Louisiana (gift).

UNITED STATES NATIONAL MUSEUM, Washington, D.C.: 20 lizards—Mexico (exchange).

UNIVERSITY OF CALIFORNIA MUSEUM OF VERTEBRATE ZOOLOGY, Berkeley, California: 4 kangaroo mice—Nevada (gift).

VATTER, ALBERT, Glenview, Illinois: 1 snake—Glenview, Illinois (gift).

WALTERS, LEON L., Chicago: 1 silver-haired bat—Homewood, Illinois (gift).

WEED, ALFRED C., Chicago: 2 trout skeletons, 7 spiders, 12 shells—various localities (gift).

WENCEL, DR. P., Peru, Illinois: 1 gray fox skin and skull—Illinois (exchange).

WENZEL, RUPERT L., Chicago: 1,147 insects and allies—various localities (gift).

WILLIM, PEDRO, Paraguay: 2 bird skins—Paraguay (gift).

WOLCOTT, ALBERT B., Downers Grove, Illinois: 7 beetles—Downers Grove, Illinois (gift).

WOODS, LOREN P., Chicago: 2,174 fishes—Illinois (gift).

WYATT, ALEX K., Chicago: 6 insects—various localities (gift).

ZARATE, ADOLFO ORTIZ DE, Najera, Spain: 67 land shells, 4 anatomical preparations, 2 microscope slides—Spain (gift).

RAYMOND FOUNDATION—ACCESSIONS

AMERICAN MUSEUM OF NATURAL HISTORY, New York: 18 slides (purchase).

FIELD MUSEUM OF NATURAL HISTORY: Made by Division of Photography: 391 slides.

Purchase: 324 slides of color photographs.

MOYER, JOHN W., Chicago: 47 slides of color photographs (gift).

NATIONAL GEOGRAPHIC SOCIETY: 9 slides (purchase).

YULE, ROBERT, Chicago: 16 slides of color photographs (gift).

DIVISION OF PHOTOGRAPHY—ACCESSIONS

FIELD MUSEUM OF NATURAL HISTORY:

Made by Division of Photography: 8,290 prints, 2,748 negatives, 445 lantern slides, 228 enlargements, 32 transparent labels, 11 transparencies.

Made by Emmet R. Blake and Karl P. Schmidt: 77 negatives of general views and landscapes in Guatemala.

Made by Dr. Paul S. Martin: 76 negatives of general views photographed at SU site excavations in New Mexico.

Made by Dr. Wilfred H. Osgood: 92 negatives of general views and landscapes in Chile.

MILLAR, JOHN R., Chicago: A negative of the Agate slab of fossils in matrix, from Agate Springs, Nebraska (gift).

NICHOLS, HENRY W., Chicago: 5 negatives of views of geological features of Wisconsin Dells, Wisconsin, and 3 negatives of an ice rampart on the north shore of Fox Lake, Lake County, Illinois (gift).

LIBRARY—ACCESSIONS

List of Donors of Books

INSTITUTIONS

- Abendpost*, Chicago.
 American Meteorological Society, Mil-
 iton, Massachusetts.
 American Museum of Health, New
 York.
 American Petroleum Institute, New
 York.
 Americana Corporation, New York.
 Antiquities Service and Museums,
 Khartoum, Anglo-Egyptian Sudan.
 Army and Navy Y.M.C.A., Waukegan,
 Illinois.
 Booth Felt Company, New York.
 Bucks County Historical Society,
 Doylestown, Pennsylvania.
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 tories, West Chester, Pennsylvania.
 Chilean Bibliographic News Service,
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 Colegio Berchmans, Cali, Colombia.
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 Instituto Tecnico Henequeno, Merida,
 Yucatan, Mexico.
 Madras Government Botanic Gardens
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 Massachusetts Archaeological Society,
 Cambridge, Massachusetts.
 Mentholatum Company, Wilmington,
 Delaware.
 Metropolitan Museum of Art, New York.
 National Association of Manufacturers,
 New York.
 New York Municipal Airport, Long
 Island, New York.
 Park Naturalists' Conference, Washing-
 ton, D.C.
 Pemez Travel Club, Mexico City,
 Mexico.
 Pioneer Valley Association, Northamp-
 ton, Massachusetts.
 United States Rubber Company, New
 York.

INDIVIDUALS

- Acosta Solis, M., Quito, Ecuador.
 Arento, George, New York.
 Baerg, W. J., Fayetteville, Arkansas.
 Bondar, Dr. Gregorio, Bahia, Brazil.
 Born, W., St. Louis, Missouri.
 Brand, Charles J., Washington, D.C.
 Bucher, Walter H., Cincinnati, Ohio.
 Ruffo, Guido, Buenos Aires, Argentina.
 Cawston, F., Durban, Natal, Union of
 South Africa.
 Coleman, Miss Dorothy G., Victoria,
 Australia.
 Comas, Juan, Mexico City, Mexico.
 Conover, Boardman, Chicago.
 Davis, D. Dwight, Naperville, Illinois.
 Deiss, Charles, Missoula, Montana.
 Dillon, Lawrence S., Reading, Penn-
 sylvania.
 Duncan, Wilbur H., Athens, Georgia.
 Eichler, Dr. Philip, New York.
 Fairbank, Mrs. John King, Cambridge,
 Massachusetts.
 Farley, Mrs. Malcolm, Chicago.
 Field, Dr. Henry, Washington, D.C.
 Field, Stanley, Lake Forest, Illinois.
 Field, Mrs. Stanley, Lake Forest, Illi-
 nois.
 Garcia Mendez, Erasmo, São Paulo,
 Brazil.
 Geiser, S. W., Dallas, Texas.
 Gerhard, Peter, Winnetka, Illinois.
 Gerhard, William J., Chicago.
 Gladstone, Sir Hugh, Dumfriesshire,
 England.
 Gleason, F. Gilbert, New York.
 Gloyd, H. K., Chicago.
 Gregg, Major Clifford C., Chicago.
 Gronemann, Carl F., Elgin, Illinois.
 Gunter, Gordon, Rockport, Texas.
 Gurney, Ashley Buell, Washington,
 D.C.

- Haas, Dr. Fritz, Chicago.
 Haas, Dr. Otto, New York.
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 Hermanson, Miss Helen, Chicago.
 Herpers, Lieutenant Henry, Short Hills, New Jersey.
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 Hovavitz, William, Pasadena, California.
 Howell, John Thomas, San Francisco, California.
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 Hyland, Fay, Orono, Maine.

 Kearney, T. H., Washington, D.C.
 Kelso, Leon, Washington, D.C.

 Leuth, Francis, Springfield, Illinois.
 Liljeblad, Emil, Villa Park, Illinois.
 Littell, J. McGregor, Mount Arlington, New Jersey.

 McCauley, Robert Henry, Jr., Plainfield, Vermont.
 Marelli, Dr. Carlos A., LaPlata, Argentina.
 Marshall, Miss Ruth, Wisconsin Dells, Wisconsin.
 Mather, Bryant, Chicago.
 Millar, John R., Chicago.
 Moyer, John W., Chicago.

 Necker, Walter, Chicago.
 Nichols, Henry W., Chicago.
 Nobre, Augusto, Oporto, Portugal.

 Norris, H. W., Grinnell, Iowa.
 Nott, Stanley Charles, Palm Beach, Florida.
 Oliverio Pinto, Oliverio M. de, São Paulo, Brazil.
 Osgood, Dr. Wilfred Hudson, Chicago.
 Phelps, W. J., Caracas, Venezuela.
 Pope, Clifford H., Chicago.
 Reed, H. S., Berkeley, California.
 Riggs, Elmer S., Chicago.
 Schmidt, Karl P., Homewood, Illinois.
 Schultes, Richard Evans, Cambridge, Massachusetts.
 Seever, Dr. Charles H., Chicago.
 Sonnenschein, Mrs. Robert, Chicago.
 Standley, Paul C., Chicago.
 Steyermark, Dr. Julian A., Barrington, Illinois.
 Stiles, Karl A., Cedar Rapids, Iowa.
 Switzer, George, New Haven, Connecticut.

 Tamayo, Francisco, Caracas, Venezuela.
 Uribe, Lorenzo, Bogotá, Colombia.
 Van Cott, Kenneth I., New York.
 Vargas, Dr. Luis, Mexico City, Mexico.
 Vasquez, Alfredo Barrera, Merida, Yucatan, Mexico.
 Wenzel, Rupert L., Chicago.
 Wilbur, Dr. C. Martin, Chicago.
 Willis, Bailey, Stanford University, California.
 Wolcott, Albert B., Chicago.
 Wood, Miss Miriam, Chicago.
 Woods, Loren P., Chicago.
 Wyatt, Alexander K., Chicago.
 Zamenhof, Dr. Stephen, New York.

ARTICLES OF INCORPORATION

STATE OF ILLINOIS

DEPARTMENT OF STATE

WILLIAM H. HINRICHSEN, *Secretary of State*

TO ALL TO WHOM THESE PRESENTS SHALL COME, GREETING:

Whereas, a Certificate duly signed and acknowledged having been filed in the office of the Secretary of State, on the 16th day of September, A.D. 1893, for the organization of the COLUMBIAN MUSEUM OF CHICAGO, under and in accordance with the provisions of "An Act Concerning Corporations," approved April 18, 1872, and in force July 1, 1872, and all acts amendatory thereof, a copy of which certificate is hereto attached.

Now, therefore, I, William H. Hinrichsen, Secretary of State of the State of Illinois, by virtue of the powers and duties vested in me by law, do hereby certify that the said COLUMBIAN MUSEUM OF CHICAGO is a legally organized Corporation under the laws of this State.

In Testimony Whereof, I hereto set my hand and cause to be affixed the Great Seal of State. Done at the City of Springfield, this 16th day of September, in the year of our Lord one thousand eight hundred and ninety-three, and of the Independence of the United States the one hundred and eighteenth.

W. H. HINRICHSEN,
Secretary of State.

[SEAL]

TO HON. WILLIAM H. HINRICHSEN,

SECRETARY OF STATE:

SIR:

We, the undersigned citizens of the United States, propose to form a corporation under an act of the General Assembly of the State of Illinois, entitled "An Act Concerning Corporations," approved April 18, 1872, and all acts amendatory thereof; and that for the purposes of such organization we hereby state as follows, to-wit:

1. The name of such corporation is the "COLUMBIAN MUSEUM OF CHICAGO."

2. The object for which it is formed is for the accumulation and dissemination of knowledge, and the preservation and exhibition of objects illustrating Art, Archaeology, Science and History.

3. The management of the aforesaid museum shall be vested in a Board of FIFTEEN (15) TRUSTEES, five of whom are to be elected every year.

4. The following named persons are hereby selected as the Trustees for the first year of its corporate existence:

Edward E. Ayer, Charles B. Farwell, George E. Adams, George R. Davis, Charles L. Hutchinson, Daniel H. Burnham, John A. Roche, M. C. Bullock, Emil G. Hirsch, James W. Ellsworth, Allison V. Armour, O. F. Aldis, Edwin Walker, John C. Black and Frank W. Gunsaulus.

5. The location of the Museum is in the City of Chicago, County of Cook, and State of Illinois.

(Signed)

George E. Adams, C. B. Farwell, Sidney C. Eastman, F. W. Putnam, Robert McCurdy, Andrew Peterson, L. J. Gage, Charles L. Hutchinson, Ebenezer Buckingham, Andrew McNally, Edward E. Ayer, John M. Clark, Herman H. Kohlsaat, George Schneider, Henry H. Getty, William R. Harper, Franklin H. Head, E. G. Keith, J. Irving Pearce, Azel F. Hatch, Henry Wade Rogers,

Thomas B. Bryan, L. Z. Leiter, A. C. Bartlett, A. A. Sprague, A. C. McClurg, James W. Scott, Geo. F. Bissell, John R. Walsh, Chas. Fitzsimmons, John A. Roche, E. B. McCagg, Owen F. Aldis, Ferdinand W. Peck, James H. Dole, Joseph Stockton, Edward B. Butler, John McConnell, R. A. Waller, H. C. Chatfield-Taylor, A. Crawford, Wm. Sooy Smith, P. S. Peterson, John C. Black, Jno. J. Mitchell, C. F. Gunther, George R. Davis, Stephen A. Forbes, Robert W. Patterson, Jr., M. C. Bullock, Edwin Walker, George M. Pullman, William E. Curtis, James W. Ellsworth, William E. Hale, Wm. T. Baker, Martin A. Ryerson, Huntington W. Jackson, N. B. Ream, Norman Williams, Melville E. Stone, Bryan Lathrop, Eliphalet W. Blatchford, Philip D. Armour.

STATE OF ILLINOIS }
COOK COUNTY } ss.

I, G. R. MITCHELL, a NOTARY PUBLIC in and for said County, do hereby certify that the foregoing petitioners personally appeared before me and acknowledged severally that they signed the foregoing petition as their free and voluntary act for the uses and purposes therein set forth.

Given under my hand and notarial seal this 14th day of September, 1893.

G. R. MITCHELL,

[SEAL]

NOTARY PUBLIC, COOK COUNTY, ILL.

CHANGE OF NAME

Pursuant to a resolution passed at a meeting of the corporate members held the 25th day of June, 1894, the name of the COLUMBIAN MUSEUM was changed to FIELD COLUMBIAN MUSEUM. A certificate to this effect was filed June 26, 1894, in the office of the Secretary of State for Illinois.

CHANGE OF NAME

Pursuant to a resolution passed at a meeting of the corporate members held the 8th day of November, 1905, the name of the FIELD COLUMBIAN MUSEUM was changed to FIELD MUSEUM OF NATURAL HISTORY. A certificate to this effect was filed November 10, 1905, in the office of the Secretary of State for Illinois.

CHANGE IN ARTICLE 3

Pursuant to a resolution passed at a meeting of the corporate members held the 10th day of May, 1920, the management of FIELD MUSEUM OF NATURAL HISTORY shall be invested in a Board of TWENTY-ONE (21) TRUSTEES, who shall be elected in such manner and for such time and term of office as may be provided for by the By-Laws. A certificate to this effect was filed May 21, 1920, in the office of the Secretary of State for Illinois.

AMENDED BY-LAWS

DECEMBER, 1941

ARTICLE I

MEMBERS

SECTION 1. Members shall be of twelve classes, Corporate Members, Honorary Members, Patrons, Corresponding Members, Benefactors, Contributors, Life Members, Non-Resident Life Members, Associate Members, Non-Resident Associate Members, Sustaining Members, and Annual Members.

SECTION 2. The Corporate Members shall consist of the persons named in the articles of incorporation, and of such other persons as shall be chosen from time to time by the Board of Trustees at any of its meetings, upon the recommendation of the Executive Committee; provided, that such person named in the articles of incorporation shall, within ninety days from the adoption of these By-Laws, and persons hereafter chosen as Corporate Members shall, within ninety days of their election, pay into the treasury the sum of Twenty Dollars (\$20.00) or more. Corporate Members becoming Life Members, Patrons or Honorary Members shall be exempt from dues. Annual meetings of said Corporate Members shall be held at the same place and on the same day that the annual meeting of the Board of Trustees is held.

SECTION 3. Honorary Members shall be chosen by the Board from among persons who have rendered eminent service to science, and only upon unanimous nomination of the Executive Committee. They shall be exempt from all dues.

SECTION 4. Patrons shall be chosen by the Board upon recommendation of the Executive Committee from among persons who have rendered eminent service to the Museum. They shall be exempt from all dues, and, by virtue of their election as Patrons, shall also be Corporate Members.

SECTION 5. Any person contributing or devising the sum of One Hundred Thousand Dollars (\$100,000.00) in cash, or securities, or property to the funds of the Museum, may be elected a Benefactor of the Museum.

SECTION 6. Corresponding Members shall be chosen by the Board from among scientists or patrons of science residing in foreign countries, who render important service to the Museum. They shall be elected by the Board of Trustees at any of its meetings. They shall be exempt from all dues and shall enjoy all courtesies of the Museum.

SECTION 7. Any person contributing to the Museum One Thousand Dollars (\$1,000.00) or more in cash, securities, or material, may be elected a Contributor of the Museum. Contributors shall be exempt from all dues and shall enjoy all courtesies of the Museum.

SECTION 8. Any person paying into the treasury the sum of Five Hundred Dollars (\$500.00) at any one time, shall, upon the unanimous vote of the Board, become a Life Member. Life Members shall be exempt from all dues, and shall enjoy all the privileges and courtesies of the Museum that are accorded to members of the Board of Trustees. Any person residing fifty miles or more from the city of Chicago, paying into the treasury the sum of One Hundred Dollars (\$100.00) at any one time, shall, upon the unanimous vote of the Board, become a Non-Resident Life Member. Non-Resident Life Members shall be exempt from all dues, and shall enjoy all the privileges and courtesies of the Museum that are accorded to members of the Board of Trustees.

SECTION 9. Any person paying into the treasury of the Museum the sum of One Hundred Dollars (\$100.00) at any one time, shall, upon the vote of the Board, become an Associate Member. Associate Members shall be exempt from all dues, and shall be entitled to tickets admitting Member and members of family, including non-resident home guests; all publications of the Museum issued during the period of their membership, if so desired; reserved seats for all lectures and enter-

tainments under the auspices of the Museum, provided reservation is requested in advance; and admission of holder of membership and accompanying party to all special exhibits and Museum functions day or evening. Any person residing fifty miles or more from the city of Chicago, paying into the treasury the sum of Fifty Dollars (\$50.00) at any one time, shall, upon the unanimous vote of the Board, become a Non-Resident Associate Member. Non-Resident Associate Members shall be exempt from all dues, and shall enjoy all the privileges and courtesies of the Museum that are accorded to Associate Members.

SECTION 10. Sustaining Members shall consist of such persons as are selected from time to time by the Board of Trustees at any of its meetings, and who shall pay an annual fee of Twenty-five Dollars (\$25.00), payable within thirty days after notice of election and within thirty days after each recurring annual date. This Sustaining Membership entitles the member to free admission for the Member and family to the Museum on any day, the Annual Report and such other Museum documents or publications issued during the period of their membership as may be requested in writing. When a Sustaining Member has paid the annual fee of \$25.00 for six years, such Member shall be entitled to become an Associate Member.

SECTION 11. Annual Members shall consist of such persons as are selected from time to time by the Board of Trustees at any of its meetings, and who shall pay an annual fee of Ten Dollars (\$10.00), payable within thirty days after each recurring annual date. An Annual Membership shall entitle the Member to a card of admission for the Member and family during all hours when the Museum is open to the public, and free admission for the Member and family to all Museum lectures or entertainments. This membership will also entitle the holder to the courtesies of the membership privileges of every Museum of note in the United States and Canada, so long as the existing system of co-operative interchange of membership tickets shall be maintained, including tickets for any lectures given under the auspices of any of the Museums during a visit to the cities in which the co-operative museums are located.

SECTION 12. All membership fees, excepting Sustaining and Annual, shall hereafter be applied to a permanent Membership Endowment Fund, the interest only of which shall be applied for the use of the Museum as the Board of Trustees may order.

ARTICLE II

BOARD OF TRUSTEES

SECTION 1. The Board of Trustees shall consist of twenty-one members. The respective members of the Board now in office, and those who shall hereafter be elected, shall hold office during life. Vacancies occurring in the Board shall be filled at a regular meeting of the Board, upon the nomination of the Executive Committee made at a preceding regular meeting of the Board, by a majority vote of the members of the Board present.

SECTION 2. Regular meetings of the Board shall be held on the third Monday of the month. Special meetings may be called at any time by the President, and shall be called by the Secretary upon the written request of three Trustees. Five Trustees shall constitute a quorum, except for the election of officers or the adoption of the Annual Budget, when seven Trustees shall be required, but meetings may be adjourned by any less number from day to day, or to a day fixed, previous to the next regular meeting.

SECTION 3. Reasonable written notice, designating the time and place of holding meetings, shall be given by the Secretary.

ARTICLE III

HONORARY TRUSTEES

SECTION 1. As a mark of respect, and in appreciation of services performed for the Institution, any Trustee who by reason of inability, on account of change of residence, or for other cause or from indisposition to serve longer in such capacity shall resign his place upon the Board, may be elected, by a majority of those present at any regular meeting of the Board, an Honorary Trustee for life. Such Honorary Trustee will receive notice of all meetings of the Board of Trustees, whether regular or special, and will be expected to be present at all such meetings

and participate in the deliberations thereof, but an Honorary Trustee shall not have the right to vote.

ARTICLE IV

OFFICERS

SECTION 1. The officers shall be a President, a First Vice-President, a Second Vice-President, a Third Vice-President, a Secretary, an Assistant Secretary and a Treasurer. They shall be chosen by ballot by the Board of Trustees, a majority of those present and voting being necessary to elect. The President, the First Vice-President, the Second Vice-President, and the Third Vice-President shall be chosen from among the members of the Board of Trustees. The meeting for the election of officers shall be held on the third Monday of January of each year, and shall be called the Annual Meeting.

SECTION 2. The officers shall hold office for one year, or until their successors are elected and qualified, but any officer may be removed at any regular meeting of the Board of Trustees by a vote of two-thirds of all the members of the Board. Vacancies in any office may be filled by the Board at any meeting.

SECTION 3. The officers shall perform such duties as ordinarily appertain to their respective offices, and such as shall be prescribed by the By-Laws, or designated from time to time by the Board of Trustees.

ARTICLE V

THE TREASURER

SECTION 1. The Treasurer shall be custodian of the funds of the Corporation except as hereinafter provided. He shall make disbursements only upon warrants drawn by the Director and countersigned by the President. In the absence or inability of the Director, warrants may be signed by the Chairman of the Finance Committee, and in the absence or inability of the President, may be countersigned by one of the Vice-Presidents, or any member of the Finance Committee.

SECTION 2. The securities and muniments of title belonging to the corporation shall be placed in the custody of some Trust Company of Chicago to be designated by the Board of Trustees, which Trust Company shall collect the income and principal of said securities as the same become due, and pay same to the Treasurer, except as hereinafter provided. Said Trust Company shall allow access to and deliver any or all securities or muniments of title to the joint order of the following officers, namely: the President or one of the Vice-Presidents, jointly with the Chairman, or one of the Vice-Chairmen, of the Finance Committee of the Museum. The President or any one of the Vice-Presidents, jointly with either the Chairman or any one of the other members of the Finance Committee, are authorized and empowered (a) to sell, assign and transfer as a whole or in part the securities owned by or registered in the name of Field Museum of Natural History, and, for that purpose, to endorse certificates in blank or to a named person, appoint one or more attorneys, and execute such other instruments as may be necessary, and (b) to cause any securities belonging to this Corporation now, or acquired in the future, to be held or registered in the name or names of a nominee or nominees designated by them.

SECTION 3. The Treasurer shall give bond in such amount, and with such sureties as shall be approved by the Board of Trustees.

SECTION 4. The Harris Trust & Savings Bank of Chicago shall be Custodian of "The N. W. Harris Public School Extension of Field Museum" fund. The bank shall make disbursements only upon warrants drawn by the Director and countersigned by the President. In the absence or inability of the Director, warrants may be signed by the Chairman of the Finance Committee, and in the absence or inability of the President, may be countersigned by one of the Vice-Presidents, or any member of the Finance Committee.

ARTICLE VI

THE DIRECTOR

SECTION 1. The Board of Trustees shall elect a Director of the Museum, who shall remain in office until his successor shall be elected. He shall have im-

mediate charge and supervision of the Museum, and shall control the operations of the Institution, subject to the authority of the Board of Trustees and its Committees. The Director shall be the official medium of communication between the Board, or its Committees, and the scientific staff and maintenance force.

SECTION 2. There shall be four scientific Departments of the Museum. Anthropology, Botany, Geology, and Zoology; each under the charge of a Chief Curator, subject to the authority of the Director. The Chief Curators shall be appointed by the Board upon the recommendation of the Director, and shall serve during the pleasure of the Board. Subordinate staff officers in the scientific Departments shall be appointed and removed by the Director upon the recommendation of the Chief Curators of the respective Departments. The Director shall have authority to employ and remove all other employees of the Museum.

SECTION 3. The Director shall make report to the Board at each regular meeting, recounting the operations of the Museum for the previous month. At the Annual Meeting, the Director shall make an Annual Report, reviewing the work for the previous year, which Annual Report shall be published in pamphlet form for the information of the Trustees and Members, and for free distribution in such number as the Board may direct.

ARTICLE VII

THE AUDITOR

SECTION 1. The Board shall appoint an Auditor, who shall hold his office during the pleasure of the Board. He shall keep proper books of account, setting forth the financial condition and transactions of the Corporation, and of the Museum, and report thereon at each regular meeting, and at such other times as may be required by the Board. He shall certify to the correctness of all bills rendered for the expenditure of the money of the Corporation.

ARTICLE VIII

COMMITTEES

SECTION 1. There shall be five Committees, as follows: Finance, Building, Auditing, Pension, and Executive.

SECTION 2. The Finance Committee shall consist of six members, the Auditing and Pension Committees shall each consist of three members, and the Building Committee shall consist of five members. All members of these four Committees shall be elected by ballot by the Board at the Annual Meeting, and shall hold office for one year, and until their successors are elected and qualified. In electing the members of these Committees, the Board shall designate the Chairman and Vice-Chairman by the order in which the members are named in the respective Committee; the first member named shall be Chairman, the second named the Vice-Chairman, and the third named, Second Vice-Chairman, succession to the Chairmanship being in this order in the event of the absence or disability of the Chairman.

SECTION 3. The Executive Committee shall consist of the President of the Board, the Chairman of the Finance Committee, the Chairman of the Building Committee, the Chairman of the Auditing Committee, the Chairman of the Pension Committee, and three other members of the Board to be elected by ballot at the Annual Meeting.

SECTION 4. Four members shall constitute a quorum of the Executive Committee, and in all standing Committees two members shall constitute a quorum. In the event that, owing to the absence or inability of members, a quorum of the regularly elected members cannot be present at any meeting of any Committee, then the Chairman thereof, or his successor, as herein provided, may summon any members of the Board of Trustees to act in place of the absentees.

SECTION 5. The Finance Committee shall have supervision of investing the endowment and other permanent funds of the Corporation, and the care of such real estate as may become its property. It shall have authority to invest, sell, and reinvest funds, subject to the approval of the Board.

SECTION 6. The Building Committee shall have supervision of the construction, reconstruction, and extension of any and all buildings used for Museum purposes.

SECTION 7. The Executive Committee shall be called together from time to time as the Chairman may consider necessary, or as he may be requested to do by three members of the Committee, to act upon such matters affecting the administration of the Museum as cannot await consideration at the Regular Monthly Meetings of the Board of Trustees. It shall, before the beginning of each fiscal year, prepare and submit to the Board an itemized Budget, setting forth the probable receipts from all sources for the ensuing year, and make recommendations as to the expenditures which should be made for routine maintenance and fixed charges. Upon the adoption of the Budget by the Board, the expenditures stated are authorized.

SECTION 8. The Auditing Committee shall have supervision over all accounting and bookkeeping, and full control of the financial records. It shall cause the same, once each year, or oftener, to be examined by an expert individual or firm, and shall transmit the report of such expert individual or firm to the Board at the next ensuing regular meeting after such examination shall have taken place.

SECTION 9. The Pension Committee shall determine by such means and processes as shall be established by the Board of Trustees to whom and in what amount the Pension Fund shall be distributed. These determinations or findings shall be subject to the approval of the Board of Trustees.

SECTION 10. The Chairman of each Committee shall report the acts and proceedings thereof at the next ensuing regular meeting of the Board.

SECTION 11. The President shall be ex-officio a member of all Committees and Chairman of the Executive Committee. Vacancies occurring in any Committee may be filled by ballot at any regular meeting of the Board.

ARTICLE IX

NOMINATING COMMITTEE

SECTION 1. At the November meeting of the Board each year, a Nominating Committee of three shall be chosen by lot. Said Committee shall make nominations for membership of the Finance Committee, the Building Committee, the Auditing Committee, and the Pension Committee, and for three members of the Executive Committee, from among the Trustees, to be submitted at the ensuing December meeting and voted upon at the following Annual Meeting in January.

ARTICLE X

SECTION 1. Whenever the word "Museum" is employed in the By-Laws of the Corporation, it shall be taken to mean the building in which the Museum as an Institution is located and operated, the material exhibited, the material in study collections, or in storage, furniture, fixtures, cases, tools, records, books, and all appurtenances of the Institution and the workings, researches, installations, expenditures, field work, laboratories, library, publications, lecture courses, and all scientific and maintenance activities.

SECTION 2. The By-Laws may be amended at any regular meeting of the Board of Trustees by a two-thirds vote of all the members present, provided the amendment shall have been proposed at a preceding regular meeting.

FOUNDER

Marshall Field*

BENEFACTORS

Those who have contributed \$100,000 or more to the Museum

Ayer, Edward E.*	Harris, Albert W.	Raymond, James Nelson*
Buckingham, Miss Kate S.*	Harris, Norman W.*	Ryerson, Martin A.*
Crane, Cornelius	Higinbotham, Harlow N.*	Ryerson, Mrs. Martin A.*
Crane, R. T., Jr.*	Kelley, William V.*	Simpson, James*
Field, Joseph N.*	Pullman, George M.*	Smith, Mrs. Frances Gaylord*
Field, Marshall	Rawson, Frederick H.*	Smith, George T.*
Field, Stanley	Raymond, Mrs. Anna Louise	Sturges, Mrs. Mary D.*
Graham, Ernest R.*		Suarez, Mrs. Diego

* DECEASED

HONORARY MEMBERS

Those who have rendered eminent service to Science

Cutting, C. Suydam	Ludwig, H. R. II. Gustaf Adolf, Crown Prince of Sweden	Roosevelt, Theodore
Field, Marshall		Sargent, Homer E.
Field, Stanley	McCormick, Stanley	Sprague, Albert A.
		Suarez, Mrs. Diego
Harris, Albert W.	Roosevelt, Kermit	Vernay, Arthur S.

PATRONS

Those who have rendered eminent service to the Museum

Calderini, Charles J.	Ellsworth, Duncan S.	Roosevelt, Kermit
Chadbourne, Mrs. Emily Crane	Field, Mrs. Stanley	Roosevelt, Theodore
Chancellor, Philip M.	Hack, Frederick C.	Sargent, Homer E.
Cherrie, George K.	Hancock, G. Allan	Sprague, Albert A.
Collins, Alfred M.	Kennedy, Vernon Shaw	Straus, Mrs. Oscar
Conover, Boardman	Knight, Charles R.	Strawn, Silas H.
Cutting, C. Suydam	Moore, Mrs. William H.	Suarez, Mrs. Diego
	Probst, Edward	Vernay, Arthur S.
Day, Lee Garnett		White, Harold A.

DECEASED, 1941

Armour, Allison V.

Wegeforth, Dr. Harry M.

CORRESPONDING MEMBERS

Scientists or patrons of science, residing in foreign countries, who have rendered eminent service to the Museum

Breuil, Abbé Henri	Hochreutiner, Dr. B. P.	Keissler, Dr. Karl
Christensen, Dr. Carl	Georges	
Diels, Dr. Ludwig	Humbert, Professor	Keith, Professor Sir
	Henri	Arthur

CONTRIBUTORS

Those who have contributed \$1,000 to \$100,000 to the Museum in money or materials

<i>\$75,000 to \$100,000</i>	Everard, R. T.*	Harris, Hayden B.
Chancellor, Philip M.	Gunsaulus, Dr. F. W.*	Harris, Norman Dwight
	Insull, Samuel*	Harris, Mrs. Norman W.*
<i>\$50,000 to \$75,000</i>	Laufer, Dr. Berthold*	Hutchinson, C. L.*
Keep, Chauncey*	Lufkin, Wallace W.	Keith, Edson*
Rosenwald, Mrs.	Mandel, Leon	Langtry, J. C.
Augusta N.*	McCormick, Cyrus	MacLean, Mrs. M.
	(Estate)	Haddon
<i>\$25,000 to \$50,000</i>	McCormick, Stanley	Moore, Mrs. William H.
Adams, Mrs. Edith	Mitchell, John J.*	Payne, John Barton*
Almy*	Reese, Lewis*	Pearsons, D. K.*
Blackstone, Mrs.	Robb, Mrs. George W.	Porter, H. H.*
Timothy B.*	Rockefeller Foundation,	Ream, Norman B.*
	The	Revell, Alexander H.*
Coats, John*	Sargent, Homer E.	Salie, Prince M. U. M.
Crane, Charles R.*	Schweppe, Mrs.	Sprague, A. A.*
Crane, Mrs. R. T., Jr.	Charles H.*	Storey, William
Field, Mrs. Stanley	Straus, Mrs. Oscar	Strawn, Silas H.
Jones, Arthur B.*	Strong, Walter A.*	
Murphy, Walter P.		
Porter, George F.*	<i>\$5,000 to \$10,000</i>	<i>\$1,000 to \$5,000</i>
Rosenwald, Julius*	Adams, George E.*	Avery, Miss Clara A.*
Vernay, Arthur S.	Adams, Milward*	Ayer, Mrs. Edward E.*
White, Harold A.	American Friends of	
	China	Barrett, Samuel E.*
	Avery, Sewell L.	Bensabott, R., Inc
<i>\$10,000 to \$25,000</i>	Bartlett, A. C.*	Bishop, Dr. Louis B.
Armour, Allison V.*	Bishop, Heber (Estate)	Blair, Watson F.*
Armour, P. D.*	Borland, Mrs. John Jay*	Blaschke, Stanley
Chadbourne, Mrs. Emily	Crane, R. T.*	Field
Crane	Doane, J. W.*	Block, Mrs. Helen M.*
Chalmers, William J.*	Field, Dr. Henry	Borden, John
Conover, Boardman	Fuller, William A.*	Chalmers, Mrs.
Cummings, R. F.*		William J.*
Cutting, C. Suydam	Graves, George Coe, II*	Chicago Zoological
		Society, The

*DECEASED

Crocker, Templeton	Knickerbocker,	Rauchfuss, Charles F.*
Cummings, Mrs.	Charles K.*	Raymond, Charles E.*
Robert F.*		Reynolds, Earle H.
Doering, O. C.	Lee Ling Yun	Rumely, William N.*
Fish, Mrs. Frederick S.	Lerner, Michael	
Graves, Henry, Jr.	Look, Alfred A.	Schwab, Martin C.
Gunsaulus, Miss Helen	Mandel, Fred L., Jr.	Schweppe, Charles H.*
Hibbard, W. G.*	Manierre, George*	Shaw, William W.
Higginson, Mrs.	Martin, Alfred T.*	Sherff, Dr. Earl E.
Charles M.*	McCormick, Cyrus II.*	Smith, Byron L.*
Hill, James J.*	McCormick, Mrs. Cyrus*	Sprague, Albert A.
Hixon, Frank P.*	Mitchell, Clarence B.	
Hoffman, Miss Malvina	Ogden, Mrs. Frances E.*	Thompson, E. H.*
Hughes, Thomas S.	Osgood, Dr. Wilfred H.	Thorne, Mrs. Louise E.
Jackson, Huntington W.*	Palmer, Potter	VanValzah, Dr. Robert
James, F. G.	Patten, Henry J.	VonFrantzius, Fritz*
James, S. L.	Prentice, Mrs.	
	Clarence C.	Wheeler, Leslie*
		Willis, L. M.

* DECEASED

CORPORATE MEMBERS

Armour, Lester	Ellsworth, Duncan S.	Probst, Edward
Avery, Sewell L.		
Blair, W. McCormick	Fenton, Howard W.	Richardson, George A.
Block, Leopold E.	Field, Joseph N.	Roosevelt, Kermit
Borden, John	Field, Marshall	Roosevelt, Theodore
	Field, Stanley	
Calderini, Charles J.	Field, Mrs. Stanley	Sargent, Homer E.
Chadbourne, Mrs. Emily	Hack, Frederick C.	Smith, Solomon A.
Crane	Hancock, G. Allan	Sprague, Albert A.
Chancellor, Philip M.	Harris, Albert W.	Straus, Mrs. Oscar
Chatfield-Taylor, H. C.		Strawn, Silas H.
Cherrie, George K.	Insull, Samuel, Jr.	Suarez, Mrs. Diego
Collins, Alfred M.		
Conover, Boardman	Kennedy, Vernon Shaw	Vernay, Arthur S.
Cummings, Walter J.	Knight, Charles R.	
Cutting, C. Suydam		Wetten, Albert H.
Day, Lee Garnett	McCulloch, Charles A.	White, Harold A.
Dick, Albert B., Jr.	Mitchell, William H.	Wilson, John P.
	Moore, Mrs. William II.	
	DECEASED, 1911	
Armour, Allison V.	Byram, Harry E.	Wegeforth, Dr. Harry M.

LIFE MEMBERS

Those who have contributed \$500 to the Museum

Abbott, John Jay	Asher, Louis E.	Barrett, Mrs. A. D.
Adler, Max	Avery, Sewell L.	Barrett, Robert L.
Allerton, Robert H.		Bartlett, Miss Florence
Ames, James C.	Babson, Henry B.	Dibell
Armour, A. Watson	Bacon, Edward	Baur, Mrs. Jacob
Armour, Lester	Richardson, Jr.	Bendix, Vincent
Armour, Mrs. Ogden	Banks, Alexander F.	Bensabott, R.
Ascoli, Mrs. Max	Barnhart, Miss	Birmingham, Edward J.
	Gracia M. F.	Blaine, Mrs. Emmons

Blair, Chauncey B.
 Block, Leopold E.
 Block, Philip D.
 Booth, W. Vernon
 Borden, John
 Borland, Chauncey B.
 Brassert, Herman A.
 Brewster, Walter S.
 Brown, Charles
 Edward
 Browne, Aldis J.
 Buchanan, D. W.
 Budd, Britton I.
 Burnham, John
 Burt, William G.
 Butler, Julius W.
 Butler, Rush C.

Carpenter, Augustus A.
 Carpenter, Mrs. Hubbard
 Carpenter, Mrs. John
 Alden
 Carr, George R.
 Carr, Robert F.
 Carr, Walter S.
 Casalis, Mrs. Maurice
 Chatfield-Taylor, Wayne
 Clark, Eugene B.
 Clegg, William G.
 Clegg, Mrs. William G.
 Clow, William E.
 Collins, William M.
 Conover, Boardman
 Cook, Mrs.
 Daphne Field
 Corley, F. D.
 Cramer, Corwith
 Crossett, Edward C.
 Crossley, Lady Josephine
 Crossley, Sir Kenneth
 Crowell, H. P.
 Cudahy, Edward A., Jr.
 Cudahy, Joseph M.
 Cummings, Walter J.
 Cunningham, James D.
 Cushing, Charles G.

Dawes, Charles G.
 Dawes, Henry M.
 Decker, Alfred
 Delano, Frederic A.
 Dick, Albert B., Jr.
 Dierssen, Ferdinand W.
 Dixon, Homer L.
 Donnelley, Thomas E.
 Doyle, Edward J.
 Drake, John B.
 Durand, Scott S.

Edmunds, Philip S.
 Ely, Mrs. C. Morse
 Epstein, Max

Ewing, Charles Hull
 Farnum, Henry W.
 Farr, Newton Camp
 Farr, Miss Shirley
 Farwell, Arthur L.
 Farwell, John V.
 Farwell, Walter
 Fay, C. N.
 Fenton, Howard W.
 Fentress, Calvin
 Fernald, Charles
 Field, Joseph N.
 Field, Marshall
 Field, Norman
 Field, Mrs. Norman
 Field, Stanley
 Field, Mrs. Stanley

Gardner, Robert A.
 Gartz, A. F., Jr.
 Gary, Mrs. John W.
 Gilbert, Huntly H.
 Glore, Charles F.
 Goodspeed, Charles B.
 Gowing, J. Parker

Hack, Frederick C.
 Hamill, Alfred E.
 Hamill, Mrs. Ernest A.
 Harris, Albert W.
 Harris, Norman W.
 Hastings, Samuel M.
 Hayes, William F.
 Hecht, Frank A., Jr.
 Heineman, Oscar
 Hemmens, Mrs.
 Walter P.
 Hibbard, Frank
 Hickox, Mrs. Charles V.
 Hill, Louis W.
 Hinde, Thomas W.
 Hixon, Robert
 Hopkins, J. M.
 Hopkins, L. J.
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 Golding, Robert N.
 Goldsmith, Mitchel
 Goldstein, Nathan S.
 Goldstine, Dr. Mark T.
 Goldy, Walter I.
 Goltra, Mrs. William B.
 Goode, Mrs. Rowland T.
 Gooden, G. E.
 Goodman, Benedict K.
 Goodman, Mrs. Milton F.
 Goodman, W. J.
 Goodman, William E.

Goodwin, Clarence
 Norton
 Goodwin, George S.
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 Gordon, Harold J.
 Gordon, Dr. Richard J.
 Gordon, Mrs. Robert D.
 Gorrell, Mrs. Warren
 Gradle, Dr. Harry S.
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 Graff, Oscar C.
 Graham, Douglas
 Graham, E. V.
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 Gramm, Mrs. Helen
 Granger, Mrs. Everett J.
 Grant, James D.
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 Graves, Howard B.
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 Gray, Dr. Earle
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 Pomeroy
 Green, Robert D.
 Greenburg, Dr. Ira E.
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 Greenman, Mrs. Earl C.
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 Gregory, Stephen
 S., Jr.
 Gregory, Tappan
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 Griffith, Mrs. William
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 Groot, Lawrence A.
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 Hall, Edward B.
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 Hann, J. Roberts
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 Hardin, John H.
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 Harris, Hayden B.
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 Alden
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- Klein, Henry A.
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 Kretschmer, Herman L., Jr.
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 Kunstatter, Sigmund W.
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 Lau, Max
 Lauren, Newton B.
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 Lawson, David A.
 Laylander, O. J.
 Leahy, Thomas F.
 Leavell, James R.
 Leavens, Theodore
 Leavitt, Mrs. Wellington
 Lebold, Foreman N.
 Lebold, Samuel N.
 Lebolt, John Michael
 Lederer, Dr. Francis L.
 Lee, David Arthur
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 Lefens, Miss Katherine J.
 Lefens, Walter C.
 Lehmann, Miss Augusta E.
 Leichenko, Peter M.
 Leight, Mrs. Albert E.
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 Leland, Mrs. Roscoe G.
 LeMoon, A. R.
 Lennon, George W.
 Lenz, J. Mayo
 Leonard, Arthur G.
 Leonard, Arthur T.
 Leslie, Dr. Eleanor I.
 Letts, Mrs. Frank C.
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 Levinson, Mrs. Salmon O.
 Levis, Mrs. Albert Cotter
 Levitan, Benjamin
 Levitz, Nathan
 Levy, Alexander M.
 Levy, Arthur G.
 Lewy, Dr. Alfred
 Lieberman, A. J.
 Ligman, Rev. Thaddeus
 Lillie, Frank R.
 Lindahl, Mrs. Edward J.
 Linden, John A.
 Lindheimer, B. F.
 Lindholm, Charles V.
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 Lingle, Bowman C.
 Linton, Ben B.
 Lipman, Robert R.
 Liss, Samuel
 Little, Mrs. E. H.
 Littler, Harry E., Jr.
 Livingston, Julian M.
 Livingston, Mrs. Milton L.
 Llewellyn, Paul
 Lloyd, William Bross
 Lobdell, Mrs. Edwin L.
 Lockwood, W. S.
 Loeb, Mrs. A. H.
 Loeb, Hamilton M.
 Loeb, Jacob M.
 Loeb, Leo A.
 Loesch, Frank J.
 Loewenberg, Israel S.
 Loewenberg, M. L.
 Loewenherz, Emanuel
 Loewenstein, Sidney
 Loewenthal, Richard J.
 Logan, L. B.
 Long, Mrs. Joseph B.
 Long, William E.
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 Loucks, Charles O.
 Louer, Albert E. M.
 Louer, Albert S.
 Louis, Mrs. John J.
 Love, Chase W.
 Lovell, William H.
 Lovgren, Carl
 Lucey, Patrick J.
 Ludington, Nelson J.
 Ludlow, Mrs. H. Durward
 Ludolph, Wilbur M.
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 Lufkin, Wallace W.
 Luria, Herbert A.
 Lurie, H. J.
 Lustgarten, Samuel
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 Lynch, William Joseph
 Lyon, Charles H.
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 Magill, John R.
 Magnus, Albert, Jr.
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 Main, Walter D.
 Malone, William H.
 Manaster, Harry
 Mandel, Mrs. Aaron W.
 Mandel, Edwin F.
 Mandel, Mrs. Emanuel
 Mandel, Miss Florence
 Mandel, Mrs. Robert
 Manegold, Mrs. Frank W.
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 Manierre, Louis
 Manley, John A.
 Mann, Albert C.
 Mann, John P.
 Manning, Miss
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 Marcus, Maurice S.
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 Marks, Arnold K.
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 Marquis, A. N.
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 Marsh, John
 McWilliams, II
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 Marsh, Mrs. Marshall S.
 Marston, Mrs.
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 Martin, Mrs. Franklin H.
 Martin, George F.
 Martin, Samuel H.
 Martin, W. B.
 Martin, Wells
 Marwick, Maurice
 Marx, Frederick Z.
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 Massena, Roy
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 McCormick, Fowler
 McCormick, Howard H.
 McCormick, Leander J.
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 H., Jr.
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 McCreight, Louis Ralph
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 McMillan, John
 McMillan, W. B.
 McMillan, William M.
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 Elizabeth W.

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 Brown, H. A.

Brown, Harlow W.
 Brown, Robert C., Jr.
 Brucker, Dr. Matthew W.
 Bruhn, H. C.
 Buchanan, Mrs. Perry B.
 Budd, Mrs. L. W.
 Buffington, George
 Bulk, George C.
 Bull, L. Perkins
 Bunn, B. H.
 Burch, Mrs. W. E.
 Burdick, Charles B.
 Burkhardt, Mrs.
 Ralph E.
 Burnet, Mrs. W. A.
 Burrige, Mrs. Howard J.
 Burrows, Miss Louisa L.
 Busch, Francis X.
 Byfield, Ernest L.
 Byrnes, William Jerome

Cable, Arthur G.
 Caesar, O. E.
 Callahan, Mrs. A. F.
 Callan, T. J.
 Campbell, Argyle
 Campbell, Donald A.
 Campbell, Mrs. John G.
 Carey, Denis P.
 Carl, Otto Frederick
 Carlson, Mrs. Annetta C.
 Carlton, Mrs. Frank A.
 Carpenter, John Alden
 Carpenter, Robert
 Carter, Mrs. C. B.
 Caspers, Mrs.
 Raymond I.
 Castle, Sidney
 Caswell, P. A.
 Cavanaugh, Robert A.
 Cerf, Floyd D.
 Cervenka, John A.
 Chandler, Charles H.
 Chandler, Dr. Fremont A.
 Chapin, Rufus F.
 Chapman, Ralph
 Chapman, Theodore S.
 Charnock, Percival R.
 Chase, Carroll G.
 Chessman, L. W.
 Childs, Kent C.
 Chrissinger, Horace B.
 Christensen, E. C.
 Christensen, Henry C.
 Citron, William
 Clancy, James F.
 Clark, A. B.
 Clark, Clarence P.
 Clark, E. L.
 Clark, N. R.
 Clark, Mrs. Ralph E.
 Clark, Robert H.

Clark, Mrs. Robert K.
 Clark, Miss Rose A.
 Clark, Willard F.
 Clarke, Mrs. A. S. C.
 Clarke, Broadus J.
 Clarke, David R.
 Clarke, Mrs. Philip R.
 Clayborne, N. F.
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 Clements, J. A.
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 Clizbe, Mrs. F. O.
 Clow, Kent S.
 Coath, V. W.
 Cobb, Robert M.
 Cobbey, J. A.
 Cochran, William S.
 Coe, Mrs. Schuyler M.
 Coen, Hyman B.
 Coen, T. M.
 Cohen, Archie H.
 Cohen, Harry
 Cohen, Louis L.
 Cohn, Morris Irving
 Cohen, Reuben W.
 Collier, John H.
 Collins, Arthur W.
 Collins, Mrs. Frank P.
 Collins, Gard M.
 Collins, H. W.
 Combs, Earle M., Jr.
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 Cook, Sidney A.
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 Couse, Arthur J.
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 Coyle, C. H.
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 Craig, E. C.
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 Crawford, Adam W.
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 Corning
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Cummings, Mrs. Dexter
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 Curran, William
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 Cuscaden, Fred A.
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 Cushman, Robert S.
 Czerwicz, Joseph H.

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 Danielson, Reuben G.
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 Davis, Charles S.
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 Davis, Don L.
 Davis, Miss Eleese E.
 Davis, Mrs. F. Ben
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 Davis, Ralph W.
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 Dunkleman, Gabriel
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 Ellis, Ralph
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 H. Close
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 Hibbard, Coleman
 High, Mrs. George H.
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Hilton, Henry H.
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 M., Jr.
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 H. O.
 Hofman, Charles M.
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 Hollender, S. S.
 Hollerbach, Joseph
 Holm, Theodore, II
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 Holmes, Miss Berenice
 Holmes, J. A.
 Holmsten, Victor T.
 Holt, McPherson
 Holter, Charles C.
 Holub, Anthony S.
 Holzheimer, Joseph
 Holzman, Alfred
 Honor, Mrs. Leo L.
 Hoope, G. F., Jr.
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 Hooper, Blake C.
 Hopkins, Dr. M. B.
 Horwitz, Irving A.
 Horton, Mrs. Arthur
 Horween, Isidore
 Horwich, Alan H.
 Horwich, Philip
 Houston, Mrs. Thomas J.
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 Howe, Roger F.
 Hoyne, Miss Susan D.
 Hoyt, N. Landon, Jr.
 Hoyt, William M., II
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 Brookes
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 Huettmann, Fred
 Huff, Dr. Robert E.
 Huffman, Frank C.
 Huguenor, Lloyd B.
 Humphrey, Gilbert E.

- Hurd, Ferris E.
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 Hurley, G. B.
 Huth, Mrs. C. F.
 Huxley, Henry M.
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 Isaacs, Lewis J.
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 Jack, Dr. Harry T.
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 Jackson, W. H.
 Jacobs, Nate
 James, H. H.
 James, Mrs. Roy L.
 James, Walter C.
 Jamieson, Norman R.
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 Jarvis, William B.
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 Jeffries, Dr. Daniel W.
 Jeffries, Dr. Milo E.
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 Jensen, George P.
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 Johnson, Dr. Adelaide
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 Johnson, Edmund G.
 Johnson, Elmo G.
 Johnson, Dr. G. Erman
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 Johnson, Miss Millie C.
 Johnson, R. T.
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 Johnson, Vilas
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 Johnston, Mrs. W. Robert
 Johnstone, Mrs. Bruce
 Jonas, Dr. Emil
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 Jones, Charles W.
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 Jones, Howard B.
 Jones, Owen Barton
 Jones, Dr. Thomas G.
 Jordan, Dr. John W.
 Joseph, Albert G.
 Joy, James A.
 Joyce, A. J.
 Juers, Henry A.
 Julian, Frederick
 Jung, C. C.
 Kaczowski, Dr. Joseph C.
 Kagan, Bernhard R.
 Kagan, Joseph
 Kahn, Jerome J.
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 Kahn, Paul J.
 Kamin, E. J.
 Kampmeier, August G.
 Kanter, Dr. Aaron E.
 Kapche, William
 Kaplan, Benjamin G.
 Kaplan, Frank
 Kaplan, Hyman
 Kaplan, Samuel
 Karker, Mrs. M. H.
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 Karstens, Norman V.
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 Katz, Miss Jessie
 Katz, Solomon
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 Kaumeyer, Mrs. E. A.
 Keady, Mrs. W. L.
 Keck, Mathew
 Keene, William J.
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 Kelley, Mrs. Phelps
 Kellogg, James G.
 Kellogg, John Payne
 Kelly, Charles Scott
 Kelly, Frank S.
 Kelly, Miss Katherine Marjorie
 Kemper, Miss Hilda M.
 Kennedy, David E.
 Kennedy, Miss Mary A.
 Kenney, Clarence B.
 Kenyon, H. M.
 Kerr, Dr. J. A.
 Kerr, Leslie H.
 Keyser, Charles F.
 Kimball, T. Weller
 King, Frank L.
 King, H. R.
 King, J. Andrews
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 Klein, Dr. David
 Kloese, Henry
 Knapp, Charles S.
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 Knol, Nicholas
 Knotts, Raymond R.
 Koch, Carl
 Koehnlein, Wilson O.
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 Kohout, Joseph, Jr.
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 Kort, George
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 Kraemer, Leo
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 Kraft, John H.
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 Krawetz, Mrs. Johannes
 Kreber, Mrs. Nellie
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 Kretzmann, Rev. A. R.
 Krez, Leonard O.
 Krier, Ambrose J.
 Kroch, Adolph
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 Kurth, W. H.
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 George
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Stops, Harry D.
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 Frederick A.
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 Vogel, Mrs. John L.
 Vose, Mrs. Frederic P.

 Wacker, Fred G.
 Wadsworth, Robert W.
 Wagner, Richard
 Wagonseller, E. A.
 Wahl, Arnold Spencer
 Waite, Roy E.
 Waitman, J. E.
 Wakerlin, Dr. George E.
 Walcher, A.
 Waldeck, Herman
 Waldorf, Bishop Ernest
 Lynn
 Wales, C. Arthur
 Walker, Louis R.
 Walker, Wendell
 Wallace, Charles Ross
 Wallace, Frank M.
 Wallach, Mrs. H. L.
 Wallenstein, Sidney
 Waller, Mrs. Edward C.
 Wallgren, Eric M.
 Walpole, S. J.
 Walsh, R. A.
 Walz, John W.
 Warner, Ernest N.
 Warner, Mason
 Warren, L. Parsons
 Warren, William G.
 Wasson, Theron
 Watkins, Frank A.
 Watkins, Frederick A.
 Watling, John
 Waugh, Miss Anna May
 Webb, Lew H.
 Weber, James
 Weber, William F.
 Webster, Harry C.
 Webster, James

Webster, N. C.
 Wegner, George W.
 Weidert, William C.
 Weil, David Maxwell
 Well, Edward S.
 Weiner, Charles
 Weinraub, Aaron
 Weiss, Louis A.
 Weissbrenner, A. W.
 Weissenborn, Leo Julius
 Weist, Milton M.
 Welch, L. C.
 Welch, R. T.
 Wellin, Elmer G.
 Wells, Mrs. H. Gideon
 Welsh, William W.
 Wentworth, John
 Wertheimer, Joseph
 Wescott, Dr. Virgil
 Wetmore, Horace O.
 Whipple, Miss Velma D.
 Whiston, Frank M.
 White, William J.
 Whitecotton, Dr. George
 Otis
 Whitelock, John B.
 Whitmore, Eugene
 Whittier, C. C.
 Whitwell, J. E.
 Wickland, Algot A.
 Wickman, C. E.
 Wilder, Emory H.
 Wilds, John L.
 Wiley, Edward N.
 Wilhelm, Frank Edward
 Willard, Nelson W.
 Williams, Clyde O.
 Williams, Lawrence
 Williams, Mrs.
 Rowland L.
 Williams, Walter H.
 Willkie, E. E.
 Wilson, Arlen J.
 Wilson, Mrs.
 Elizabeth C.
 Wilson, Grant V.
 Wilson, L. F.
 Wilson, Percival C.
 Wilson, W. M.
 Windes, Mrs. Frank A.
 Winship, Miss
 Florence S.
 Winston, Mrs. Farwell
 Winterbotham, John R.
 Witham, Miss Marie
 Witkowsky, James
 Wolosh, George
 Wood, Milton G.
 Woodson, William T.
 Woodyatt, Dr. Rollin
 Turner
 Woolard, Francis C.

Wormley, Edward J.
 Wright, William Ryer
 Wrisley, Mrs. Allen B.
 Wrisley, George A.
 Wuichet, West
 Wulbert, Morris
 Wupper, Benjamin F.
 Wurth, Mrs. William

Wynekoop, Dr.
 Charles Ira
 Yanofsky, Dr. Hyman
 Yonce, Mrs. Stanley L.
 Youngberg, Arthur C.
 Zadek, Milton

Zangerle, A. Arthur
 Zenos, Rev. Andrew C.
 Zglenicki, Leon
 Zimmerman, Charles J.
 Zimmermann, Mrs. P. T.
 Zolla, Abner M.
 Zonsius, Lawrence W.

DECEASED, 1941

Austin, M. B.

Baker, C. M.
 Barber, Charles E.

Condee, Ralph W.

Drew, Walter W.

Farnsworth, George J.
 Flory, Owen O.

Geraghty, Charles M.
 Goergen, Dr. Philip C.
 Grey, Newton F.

Griesel, Edward T.

Hess, Sol H.
 High, Shirley T.

Johnson, B. W.

Krol, Dr. Francis B.

Loewenstein, Emanuel

Magie, William A.
 Moss, Alfred J.

Nolte, Charles B.
 Novy, Dr. B. Newton

O'Toole, Mrs.
 Bartholomew

Pentecost, Lewis J.
 Place, Frederick E.
 Plamondon, Alfred D.

Reuss, Mrs. Henry H.

Sanborn, Mrs. V. C.
 Sissman, Peter
 Springer, Charles E.
 Stewart, William

Uhlemann, William R.
 VanPelt, H. C.

